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THE UNIVERSITY OF ALBERTA

INTEGRATION IN DAYCARE:
TWO INSERVICE MODULES

by

MALCOLM V. READ

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
AND RESEARCH IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OR MASTER OF EDUCATION
IN SPECIAL EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY
EDMONTON, ALBERTA

SPRING, 1988

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ISBN 0-315-52770-6

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DEGREE: M.Ed.

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

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ABSTRACT

The placement of handicapped children into regular daycare settings has become an increasingly popular child care alternative in the last decade. However, this movement appears to be ahead of any substantive research evidence concerning its efficacy. What evidence there is suggests that unless there is considerable preparation and planning the handicapped child may be at some risk in an integrated setting.

This study has evaluated the effects of two inservice modules which were aimed to offer systematic training in order to facilitate the handicapped child's communication and to encourage the use of peers as facilitators of social interaction.

While these modules met with modest success, a number of questions regarding possible future areas of study are indicated.

ACKNOWLEDGEMENTS

Expressions of gratitude are due to all those who contributed to this thesis. To Dr. Gerard Kysela, whose limitless patience, support and advice were deeply appreciated. To Drs. Fern Snart and Jan Blakey for their valuable input, and for taking time to serve as committee members. To the children and staff at the daycare centres in Wetaskiwin and Red Deer, without whose cooperation this project could not have taken place.

Finally, to my family and friends, for their patience and support throughout this project.

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CHAPTER I

INTRODUCTION

A. The Problem

The provision of appropriate services for children with special needs has become an increasingly important concern for early childhood personnel. A growing awareness of the importance of integrating young handicapped children has led to a decline in the number of segregated programs, and to an increase in the numbers of young handicapped children enrolled in regular daycare programs.

This movement has, however, moved ahead of the research which is necessary to substantiate the efficacy of including these children in regular daycare programmes. It has become apparent that the physical inclusion of the child does not necessarily result in his/her benefitting from the programme, and that there are other, more complex factors which need to be addressed.

Among the factors which impact on the success of a child's integration into a daycare programme are those involving the quality and consistency of the care provided, the attitudes and competencies of the primary caregivers, and the support services available to those programmes from the community.

Within Alberta, daycare staff frequently have no formal training or preservice instruction which will assist them in ensuring that consistent and appropriate strategies are used to help the child with special needs to benefit from his/her inclusion in the regular programme.

B. Statement of the Problem

Given that caregivers employed to work with young children with special needs in integrated daycare settings may not have relevant training, and that other factors influencing the efficacy of the integration of these children may not be adhered to, this study sought to determine the impact of two inservice training sessions on the intregation process between children and staff in three daycare centres in Alberta.

The specific objectives of the training were determined from the literature, and were considered to be both important to the integration process and straightforward enough to be attainable in a relatively short period of time. The purpose of the first training session was to provide the caregivers with skills that would promote the interactive capabilities of the children with special needs. These teaching skills, or ecological strategies, adapted from the work of MacDonald (1982), included training the staff to establish and maintain turntaking and social interaction through the use of strategies such as imitation, and verbal and physical prompting. The purpose of the second inservice training session was to train the caregivers to employ the child's peers to act as trainers or facilitators of peer interaction patterns.

The effectiveness of these inservice training sessions was determined by direct observation of the children with special needs, their peers, and the childcare workers within the natural daycare settings.

C. Scope and Limitations of the Study

This investigation was conducted over a five month period, with caregivers from 3 daycare centres, which integrated children with special needs, participating in two inservice training modules. The daycare centres ranged in size from 35 to 80 children, and in environmental design from two large groups of approximately twenty children, to seven small groups of 10-12 children. In all cases one staff person was identified as having responsibility either for an individual child, or for a group of children with similar special needs. The eleven children who were the focal subjects of the investigation displayed a variety of conditions including sensory impairments, motoric disabilities, and general developmental delays.

Data were collected by means of direct observation within the daycare centres. These observations were made twice weekly for sixteen weeks. The observations were for 10 mintues each, and included a number of interactive behaviors which involved the focal child, and adults and peers within his/her environment.

While the naturalistic nature of the study's design does allow for greater generalizability of its findings, there are some factors which have to be treated with particular caution. The limits to the external validity of this study, and the particular design features included to counteract these threats, are discussed later in the Method section. Similarly, the threats to the internal validity of the investigation were considered carefully. One of the most critical of these threats was the collection of data by direct observation of

behaviors by a number of observers. Again, a full discussion of the precautions taken is contained later.

Other dependent variables which were difficult to control included the differences in the various settings in which this study took place, the numbers of children, both those with special needs and their peers, the consistency of the caregivers roles, the number of hours that a child spent in the daycare centre, and the amount of external support offered to the child and his/her caregiver by other community agencies.

These factors, together with the varied backgrounds and disabilities of the children make it difficult to give absolute statements with respect to which variable or particular combinations of variables may have impacted on the results of the investigation.

The results of this study, it is therefore suggested, should be treated with some caution, although possible directions for future study in this area have been identified, and it is possible to estimate some generalizations from the findings.

CHAPTER II

REVIEW OF THE LITERATURE

A. Daycare

When both parents work outside the home, or when they need a break from the rigors of parenting, substitute childcare must be found. A growing option for families, and one into which many young children with special needs have been integrated, is daycare. It is estimated that 15% to 20% of the care of young children is provided by daycare centres (Flake-Hobson, Robinson and Skeen, 1983). The effects of these centres on the development of children has been the cause of debate for much of the past twenty-five years. While there continues to be a need for considerably more definitive research, at present the literature available indicates that there are no major or significant differences between children raised in daycare and those raised in a home (Caldwell, 1970). Belsky and Steinberg (1978) argue that there are conclusive data on three points:

1. There are no damaging effects on the intellectual development of the child.

According to Belsky and Steinberg (1978):

> The overall picture of evidence, duly qualified, suggests that the daycare experience has neither salutary nor adverse effects on the intellectual development ... of most children. For economically disadvantaged children, however, daycare may attenuate declines in test scores typically associated with high risk populations after 18 months of age. (Belsky & Steinberg, 1978, p. 931).

This view is supported by Ramey & Haskins (1981), whose study followed children who entered daycare as infants. This research demonstrated that in the case of high risk infants, centre daycare prevents the decline in intellectual performance frequently observed in home reared children after the age of 2.

2. There are increases in the child's positive and negative interactions with agemates and non-parent adults.

A number of studies have reported on the social development of daycare children since this conclusion of Belsky and Steinberg (1978).

These confirm the earlier findings by asserting that daycare can have positive and negative effects on relations with peers and non-parental adults. Ramey, Dorval and Bakes-Ward (1981) presented data which showed that children who had been in daycare centres during their infancy and preschool years were more hostile during the fall of their kindergarten years. However, Ramey, MacPhee. and Yeats (1981) found that these children to be more socially confident at each age and less fearful of non-parent adults. Gunnerson's (1978) study revealed no rearing-group differences in children's compliance and cooperation with, and positive affect expressed towards, adults. Clarke-Stewart (1980) found that prosocial behavior was positively related to the amount of verbal interaction children experienced during the day with adults.

The general conclusion from these studies would seem to be that the effect of daycare on social development will likely

depend on the community and cultural context in which daycare is employed, as well as the particular practices of the daycare program.

3. There is no disruption in mother-child attachments.

According to Belsky and Steinberg (1978):

> The total body of evidence regarding the effect of daycare on the children's attachments to their mothers offers little support for the claim that daycare disrupts the child's tie to his mother (Belsky & Steinberg, 1978, p. 939).

This has been supported by the more recent evidence presented by Blanchard and Main (1979). They found avoidance of mother by 1-2 year olds, both during daily pickup from daycare to be negatively related to months in centre childcare. They concluded that their data suggested that young children may go through a period of stressful adaptation to childcare. But once they come to understand that regular separation from parents need not imply loss of the attachment figure, adaptation is achieved and problematic behavior is reduced. A study by Vaughn, Gove and Egeland (1980) suggested that the infant-mother attachment can be undermined by the use of out-of-house childcare arrangements. However, their study was restricted to looking at infants from high-risk environments who were enrolled in unstable daycare arrangements prior to their first birthday.

These findings were supported by Harper (1978) who concluded, "although it will continue to be in vogue to talk about the deleterious impact of daycare centres ... the weight of accumulated evidence is beginning to suggest that it is simply not so" (Harper, 1978, p. 27).

In studying characteristics of daycare centers, Cook (1985) and Bagley (1986) listed a number of factors which have a direct bearing on the quality of the care provided to children. These include staff training, group size, adult-child ratios and the physical environment. Typically within Alberta, daycare centres range in size from thirty to eighty children, with group sizes of between ten and twenty-five children. In addition, teachers may not have pre-service or inservice training to work with non-handicapped children and there is no requirement of training for personnel hired to work with children with special needs enrolled in these centres (Bagley, 1986).

These characteristics may impact on the efficacy of mainstreaming in daycare centres. Several studies on integration in preschool programs discuss variables such as teacher training and attitude, the severity of the disability of the child and the ratios of handicapped to non-handicapped children (Peterson and Haralick, 1977). Barros (1983), in looking at the integration of young children in Alberta, found a number of key areas needing attention. She identified "a lack of organizational structure and unclear role definitions with regard to the planning and implementation of the handicapped child's individual program" (Barros, 1983, p. 87) and "the lack of specific planning strategies aimed at maximizing the integration experience was also apparent" (Barros, 1983, p. 84). With regard to staff competence she found, "many staff working in integrated programs felt inadequately trained and prepared for integration" (Barros, 1983, p. 84) and also that there was a lack of consistent curriculum and instructional material.

An additional factor is the possible congruence or incongruence of the philosophy or approach used in organizing the daycare programs, and the individual programs for children with special needs. Daycare centres tend to be play-based, with an eclectic approach to working with young children, often emphasizing a developmental-interactionists philosophy (Biber, 1977). This philosophy tends to de-emphasize didactic situations, particular skill learning and teacher directed activities; rather it emphasizes child-centerd activities, with the teacher taking on the role of facilitator. Vincent, Brown & Getz-Sheftel (1980) found major differences between regular and specialized kindergartens, in terms of the amount of teacher-directed instruction, and the precision planning of the curriculum. However, kindergarten programmes in Alberta employ qualified teachers and have a clearly articulated and legislated philosophy position (Alberta Education, 1982). This position is quite removed from the situation normally found in daycare centers. The expectation that teachers, often without any formal training, should have the skills to incorporate precise intervention strategies necessary for successful integration into daycare centres, suggests that there is a need for both preservice and inservice training (Doris and Sarason, 1979). Barros (1983), in discussing teacher competence in preschool settings in Alberta, saw a need for both inservice and preservice training, suggesting that training institutions "will have to come to terms with the merging roles of special and general education" (Barros, 1983, p. 78).

B. Integration

Integration, Least Restrictive Environments and Mainstreaming, terms that are all familiar to practitioners in early childhood special education, often defy accurate definition, and have been the subject of considerable misconception. The social and philosophic movement towards mainstreaming had its forefront in the 1960's (Dunn, 1968; Johnson, 1962; Kirk, 1964). From this time the beginnings of the move away from segregated self-contained classrooms and schools can be traced (Lilly, 1970; Wolfensberger, 1972). The inception of Public Law 94-142 (The Education for All Handicapped Children Act, 1975), in the U.S.A., mandating that all handicapped children, regardless of the severity of their handicap, are to be educated in the least restrictive environment to the maximum extent feasible, has made significant legal contribution resulting in increases in the numbers of integrated settings for children (Carlberg, and Kavale, 1980). However, the integration of a child with handicaps into a regular program has not always been a successful experience for the child, his family or the teacher (Glazzard, 1980). While there has been some attempt to describe and delineate the process of integration (Dunn, 1973), measures of its efficacy are not well researched.

> At best, the available evidence suggests that mainstreamed programs are feasible, at least for the more mildly handicapped children. Beyond that statement, a summary of findings in relation to needs for additional work would not serve any useful purpose; research in all directions is desperately needed (Guralnick, 1981, p. 13).

The specific advantages for the handicapped child focus on his exposure to models of normal, age appropriate language and social

behavior (Sandall, 1978). More general advantages include the opportunity to influence attitudes towards those who are handicapped, through familiarity and direct social interaction (Samuel, Gottlieb and Robinson, 1979; Snyder, Apolloni and Cooke, 1977). While it is generally agreed that the mere physical placement of a handicapped child into an integrated setting is not a sufficient condition for acceptance, it is a necessary condition (Safford and Rosen, 1981).

Of pertinence to this study are the literature reports on factors which influence the effectiveness of integration of young children with handicaps into regular preschool programs. A number of studies have looked primarily at the impact of the integration experience on the handicapped child, and have attempted to delineate those factors or conditions which increase the chances for success (Allen, 1980; Bric' er, 1978; Guralnick, 1980; Peck, Apolloni and Cooke, 1978).

Teacher Attitude and Competence

Good and Brophy (1973) stated that, "... not only do children emulate the teacher's behavior, but they also observe and internalize values based on the teachers' example" (Good and Brophy, 1973, p. 23).

Klein (1975) suggests that the stress on variation and difference in development which is central to the training of early childhood teachers, assists such teachers in seeing the needs of the handicapped, only more so. This being the case, then it is a positive factor, as Allen (1981) states, "the teacher's attitude towards

handicapped and developmentally disabled children is of extreme significance in a mainstreamed setting." (Allen, 1981, p. 17).

However, Tawney (1981) suggested that mainstreaming at the preschool level is the exception rather than the rule. The reasons include a lack of teacher training, negative attitudes towards the handicapped from regular teachers, teachers experiencing planning difficulties due to wide discrepancies in development, and a view from some teachers that integration programs are little more than "dumping" placements. Barros (1983) also found that many teachers working in preschool settings felt inadequately prepared and trained for integration.

In suggesting guidelines that should be adhered to when implementing an integrated program, Blacher-Dixon, Leonard and Turnbull (1981) stressed the need for adequate teacher preparation, both in the areas of attitude and instructional skills. This suggestion is supported by Fredericks, Baldwin, Grove, Moore, Riggs, and Lyons (1978) and by Guralnick (1976).

Cooke, Ruskins, Apolloni, and Peck (1981) found that children in the third year of their 3 year study on the effects of integration, progressed more than children in the first year of the study. They attributed this finding to the increasing skills of the teachers.

Teachers in the Head Start program, the only preschool program legislated to integrate handicapped children in the U.S.A., were observed to offer more support to the handicapped than to the non-handicapped. Harlan and Reyses (1980) noted differences in such factors as, "... the amount of encouragement and approval ...

promotion of independence ... guidance towards social interaction with peers ... and total verbal communication" (Harlan and Reyses, 1981, p. 131). However, even in this situation, they found that children displaying emotional/behavioral difficulties received less encouragement and more criticism than any other children.

Program Congruence

Another variable, closely related to teacher attitude and competence, is that of the philosophic base or structure of the program into which the handicapped child is integrated.

Safford and Rosen (1981) state,

> Mainstreaming programs may not bring into focus a confrontation of beliefs and values so much as a disparity in method. The problem is one of integrating the specialized methods required in a manner congruent with the situational context of a regular classroom (Safford and Rosen, 1981, p. 43).

While there is no authorized or generally determined philosophy in daycare centres in Alberta, many would subscribe to a developmental-interaction model which has been spearheaded by Bank Street College in New York City. The main focus of this model is to foster the child's total development by building self-esteem and self-direction in learning. Another central feature of this model is that of providing experiences:

> ... which make it possible for children to try out, shift backward as well as forward, to create where necessary the opportunities for the kind of interaction that is essential for the assimilation of experience, the achievement of new integrations, and the resolution of conflict in both the cognitive and emotional realms (Shapiro and Biber, 1972, p. 37).

Programming for particular content skills and knowledge are de-emphasized, and internal motivation is considered a key to sound learning experiences.

While this approach has many excellent features, it may cause problems in some attempts to integrate young handicapped children. As Allen (1981) points out, "the looser the structure (or the more open the environment) the greater the need for high level teacher training" (Allen, 1981, p. 14). She goes on to say that,

> Many, if not all, handicapped children are in particular need of a high degree of structure in their learning environments ... often (they) do not have a repetoire of basic skills that both motivate and enable them to explore, experiment and thus learn almost spontaneously from play (Allen, 1981, p. 15).

This view is supported by Allen, Benning, and Drummond (1972) and by Haring, Hayden, and Allen (1971), "the young handicapped child must be taught to play ... step by step, with a great deal of teacher-directed instruction." (Hayden & Allen, 1971, p. 41).

The combination of factors found in daycare centres, including varied conditions and long hours of group care, with a program structure which de-emphasizes specific skill training, and for which little external consultation and support is available, indicates a need for both preservice and inservice training for staff if integration is to succeed.

The need is well summarized by Ashton-Lilo (1981):

> It is assumed that a well-functioning preschool teacher and classroom encourages children to be motivated and interested while engaging in a variety of activities that teach a range of skills and social competencies. It is also well organized, and individual differences are taken into consideration in planning to ensure that all children are

> able to become maximum participants in learning. The atmosphere is positive with problems anticipated and prevented when possible. Teachers also provide children with descriptive feedback and encouragement and integrate specific goals for individual children into the daily activities as much as possible.
> This is a big order! (Ashon-Lilo, 1981, p. 43)

Imitation/Modelling

Two of the guidelines for integrated programmes as proposed by Blacher-Dixon et al. (1981) were the promotion of peer tolerance and acceptance of children with differences and the promotion of social interactions. Guralnick (1976) listed three major aspects generally cited in support of the integration process. These are as follows: to increase the sensitivity of the non-handicapped, to provide teachers with a framework for gauging child behaviors within a developmental context, and, that the handicapped child will benefit from observing and imitating his non-handicapped peers.

One of the fears expressed about integration has been that the non-handicapped will imitate inappropriate behaviors. While most research on integration has looked at the effects on the handicapped child, those studies which do report on this "reverse" imitation state that it does not occur spontaneously in either free-play or structured teaching situations (Peterson, Peterson, & Scriven, 1977). Goldman (1976), Apolloni and Cooke (1978) and Strickhart (1974) all report that children will only model the behaviors of more competent peers. Vincent, Brown, & Getz-Sheftel (1981) commented on these reports: "These studies ... serve to illustrate the point that children learn through observing, practicing, and modelling the more competent

behaviors of their peers" (Vincent, Brown, & Getz-Sheftel, 1981, p. 34). Hamline (1985) added, "If, however, a non-disabled child does imitate a disabled peer, it is appropriate, not inappropriate, behavior which is imitated." (Hamline, 1985, p. 17).

A number of trends or factors regarding the imitative behavior of handicapped children in integrated settings have been consistently reported. The first of these is that the physical placement of the child among his non-handicapped peers does not lead to spontaneous or consistent imitation of desirable behaviors (Cooke, Apolloni, & Cooke, 1977; Guralnick, 1976). The conditions which do encourage imitative behaviors include matching the child who is modeling the behavior in some very real ways. Bandura, Ross, and Ross (1963) suggested the need to match according to age, sex and race, while Abramovitch and Grusec (1978) suggested that more imitative behavior occurs if the child modeling the behavior is approximatley one year younger than the handicapped child. A second factor is the need for direct intervention by the teacher (Strain, 1977; Dunlop, Stoneman, & Cantrell, 1980; Bricker and Dennison, 1978). This intervention should ensure that the models provided are appropriate for the child's level of development, provide a range of assistance by shaping the environment and offer prompts and cues, and by reinforcing any imitative acts which occur (Tawney, Knapp, & O'Reilly, 1979).

Bricker and Dennison (1978) described a program for training verbal imitation skills in young children. In this six stage program the authors described in detail the intervention skills needed by the teacher. These skills include imitating or responding to any

vocalization made by the child, assisting the child to perform actions either simultaneously or with brief deferral, chaining vocal imitations, with the teacher imitating the child and then prompting the child to repeat the imitation, reinforcing the child for imitating other models, and finally increasing expectations to verbalizations. Baer, Peterson, and Sherman (1967) conducted a study of the use of reinforcement in imitation training. Using shaping and fading procedures, each handicapped child was taught to respond to single actions (clapping hands) and then to multiple behaviors. By reinforcing the children responding to other models, and by combining a previously learned response with a new response, they were able to show some success in the generalization of imitative behaviors.

Peer Training

Several reports have been made on the effectivenes of training non-handicapped peers to act in a proactive and didactic role to encourage imitation and interaction with the handicapped. Guralnick (1981) and Strain et al. (1981) have suggested that the use of peers as facilitators of imitative behavior is at least as powerful a technique as the direct intervention of an adult. Several studies (Allen, 1976; Apolloni and Cooke, 1978; Hartup, 1970) have reported success in this area. These authors reported the use of teaching peers to respond to the initiations of handicapped children, to imitate them, and to use verbal and physical prompts to maintain the imitative behaviors. Peck, Apolloni, Cooke, and Raver (1978) reported significant gains in the imitative behavior of three children with

Down's Syndrome when they were integrated with three non-handicapped peers who were taught to use particular strategies to encourage imitation. An attempt to teach imitative behavior to a four year old autistic child (Nordquist, 1978) demonstrated that peer training of the handicapped child resulted in more spontaneous imitation behavior than when the teacher acted as mediator.

The available literature indicated that imitative behavior, so important in the integration of young handicapped children, can be prompted by the use of a number of strategies. Teachers can prompt and reinforce desired social behaviors such as sharing and cooperating through modelling and imitation (Fredericks et al., 1978; Allen, 1980; Cooper and Holt, 1981). Non-disabled children can learn to initiate social behaviors and reinforce appropriate behaviors of their disabled playmates (Strain, 1977). Both of these strategies produce an increase in cooperative and socially interactive play with no detrimented effects on the non-disabled or the disabled children.

The only cautionary note concerns the severity of the disability of the child.

> Considerable and occasionally dramatic success has been achieved for children with relatively mild problems ... on the other hand such techniques have been far less successful for children with more severe developmental delays (Guralnick, 1981, p. 53).

C. Inservice Training

In the absence of a consistent preservice training program for those employed to work in integrated daycare settings the notion of inservice training becomes an attractive alternative. Taba (1965) stated,

> Inservice Education provides one way to assist teachers in rising to the challenges of teaching ... It serves a dual purpose - that of subject matter understanding and improving the practice of teaching ... it is a process of planned change. (Taba, 1965, p. 31)

The need for programs of inservice education has been widely acclaimed in the literature related to professional growth in education for many years (Hass, 1957). However, there is a strong note of caution running through much of the literature. Among these, as discussed by Taba (1965), is the caution of providing background content to teachers without a simultaneous effort at instructional implementation. This may lead to misunderstanding by teachers, as in the example cited by Taba (1965) of the teacher who attempted to teach the "Market System" to first grade students after attending a workshop on Economics (Taba, 1965, p. 475). On the other hand, instructional skills and techniques presented in isolation from the concepts or the rationale, easily degenerate into gimmicks.

Rogers and Shoemaker (1971) expressed the concern that inservice programs are often no more than "one shot" workshops, offered without sufficient analysis of the problems and the needs they are to serve, and without adequate follow-up to capitalize on what is offered. Inservice training, they argue, might be more effective if continuity was provided. The greater the changes in teaching strategies, the greater the need for inservice to include the opportunity and time to consider and practice the steps involved in producing such changes.

Gallagher (1975) presented some guidelines for designing inservice workshops. These included:

1. Actively involve participants;

2. Consider participants different levels of readiness for the proposed activities;
3. Design activities through which participants discover for themselves;
4. Determine what participants want to gain from the inservice.

The need to involve participants in their own learning, and whenever possible to secure their assistance with the initial planning, is a recurring theme in the literature (Osborne, 1977). Lippitt and Fox (1971) suggest that a large proportion of inservice training activities fail because the activities are selected without involving the participants and without regard for the levels of readiness or variety of expectations. Harris and Bessent (1969) advocate the inclusion of other design elements. These elements include involvement of participants in solving problems, simulation activities, feedback from participants, development of generalization strategies, and implications for practice.

Evaluating the effectiveness of inservice education has no simple design or standard procedure. Wells and Lindquist (1977) commented that it is a complex task to evaluate anything with uncontrolled variables such as inservice education. One approach to evaluation is a planning process whereby all the components are identified in a model that shows their relationships and feedback lines (Wilkes, Coblentz and Strong, 1977). Wells and Lindquist (1977) suggest a number of methods of evaluation, including group discussion, written reactions, and observation of behavioral changes by the participant after the inservice training.

Inservice Modules

a. Content and Design

The inservice modules used in this study were designed to present skills and strategies to childcare workers in daycare centres, in order to enhance the interactive skills of young handicapped children integrated into their programs. All of the strategies were taught to the staff members, although the second part of the training had implications for the non-handicapped, as well as the handicapped children and staff.

The particular strategies taught were based on the model presented by MacDonald (1980), Ecological Communication Opportunities. This model combines two theories of language acquisition which are the focus of many intervention attempts. The first of these, parent-child interactions, stresses the importance of reciprocal social interactions as a source of language (Bruner, 1983; Stern, 1977). The second, pragmatics, focuses on children learning language by learning how to communicate (Bates, 1976). The E.C.O. model translates these approaches to language acquisition into a set of intervention strategies.

It represents "an ecological and conversational approach to communication invention" (MacDonald and Gillette, 1984, p. 5).

The first inservice module was aimed at presenting the skills required to establish turntaking with young handicapped children. These included the importance of balance in turntaking, so that neither person dominated an interaction by doing most of the talking, acting or deciding, and matching the mode or method of communication

used by the focal child. Four possible modes of communication were considered: nonlinguistic, vocal, words, and phrases. Other skills taught included imitation of the child's actions or vocalizations, waiting expectantly for the child to respond, signalling wants or needs, using any gesture, vocalization or verbalization which tells the child "take your turn", and physical prompting.

These strategies are suggested by MacDonald (1984): "The wait-signal-prompt sequence becomes a predictable series of contingencies in which the child learns to interact" (MacDonald, 1984, p. 176).

The second inservice module was also based on the model and strategies for language intervention as presented by MacDonald (1984). However, the focus of this training was to give the daycare staff the strategies necessary to involve the non-handicapped peers as direct mediators in the interactive strategies.

The rationale for the direct inclusion of peer-mediated strategies was based on the literature which stresses the need for children to experience sustained and successful interactions with peers in order to fully develop a full array of developmental competencies (Hartup, 1978; Strain et al., 1976; Guralnick & Paul-Brown, 1977). Kysela and Barros (1983) reported that handicapped children in preschool settings spent a majority of their time in non-interactive situations; approximately 50% was spent in isolate or parallel play.

The particular objectives of the inservice education were based on the studies of Strain and Fox (1981). The objectives included

giving the daycare staff the skills to select appropriate peers to act as mediators (the criteria for selection were reviewed earlier in this chapter); the establishment of joint-task activities (Hops et al., 1978), which would provide opportunities for the handicapped child to interact with his/her peers on a daily basis over an extended period of time; and strategies for the generalization and maintenance of social interactions through the use of social reinforcement (Hendrickson et al., 1982).

A full description of Inservice Modules No. I and II is given in Appendix A.

D. Summary

The growing popularity of daycare as a substitute for parent care, and the ever growing popular demand for the integration of handicapped children, has resulted in an increase in the numbers of young children with special needs being enrolled in regular daycare programs.

However, as this review of the literature shows, there are some factors involved in integration about which sufficient information is unavailable. In addition, even those features shown through the literature to be important if integration is to benefit the child, his family and other children, are not necessarily adhered to. Daycare offers its own particular set of problems which may not enable it to meet those guidelnes given in the research.

Perhaps the most important single factor affecting the success of integration is that of teacher competence and attitude.

Unfortunately, in daycare centres in Alberta, staff are not required to receive any formal training, and many feel inadequately prepared and supported to meet the needs of an integrated program.

As a result of these findings inservice modules were designed to provide staff with some specific skills and strategies which it was hoped would impact directly on the interactive capabilities of the children. The effects of these inservice presentations were measured by direct observation of the interaction patterns within the daycare centres.

CHAPTER III

RATIONALE

The purpose of this study is to determine the impact of inservice training on childcare workers who are involved in working with young children with disabilities in daycare centres. It is anticipated that observable changes will be made in the patterns of social interactions between the adults and the children with special needs, and between the latter group and their non-handicapped peers. It is through a systematic collection and analysis of the changes which do occur within the natural classroom setting that an estimate of the effectiveness of the inservice training can be made. Two inservice modules were presented, one aimed specifically at the interactions between the adults and handicapped child, and the second aimed at improving the interactions between the handicapped children and their peers.

1. Inservice Module #1: Ecological Teaching Strategies

The ecological and conversational approach to communication intervention proposed by MacDonald (1980) includes a number of units which may be assessed and trained. These units were explored, in the first module, with regard to the communication between the adult teacher(s) and the handicapped child. As MacDonald (1980) says, "parents and teachers must learn that frequent give and take exchanges are an absolute necessity in a communication training program" (MacDonald, 1980, p. 14).

Several specific skills or units taught in this module were the subject of ongoing observation in the classroom. In the first place, strategies to attain and then maintain turntaking exchanges with the child were taught. These strategies included maintaining a balance of turns by reciprocating actions or verbalizations and periods of waiting with the handicapped child. If the latter failed to recognize when it was time to take her/his turn the use of signalling and physical prompting were strategies presented to the teachers as ways of increasing the length of interactions.

A further strategy given was that of the need to imitate the actions or verbalizations of the child in order to establish reciprocal turntaking. The primary function of teaching the child to imitate is to tell her/him to "do as others do". Once interactions based on imitations of the child's actions are established, the teacher can start to introduce new actions, waiting, signalling, and prompting for the child to imitate these external behaviors.

A final area covered was that of the importance of the teacher matching the mode of the child in establishing interactions. The rule taught was that of communicating with the child's current behaviors, and with a model slightly higher.

The research questions addressed by this study, therefore, were directly related to the measurement of the success of these inservice objectives in ths Module.

1. As the result of training, was there a significant increase in the instructional staff's use of ecological teaching strategies?
   a. imitation

b. signal

c. physical prompt

2. As a result of training, was there a significant increase in the rate of turntaking exchanges between the handicapped child and the instructional staff?

3. As a result of training, was there a significant increase in the length of the turntaking exchanges between the instructional staff and the handicapped child?

2. Inservice Module #2: Peer Training

The units for communication intervention which were presented in the first inservice module were then given to the teachers with some additional strategies to encourage changes in the interactive patterns between the handicapped child and her/his peers.

The following specific strategies were presented to the teachers. First, Peer Training, in which the teachers were encouraged to select one or more of the handicapped child's peers, and to teach the skills necessary to initiate and maintain turntaking activities with the handicapped child. These skills included initiating, imitating, signalling, and physical prompting. Secondly, the teachers were given criteria for selecting and organizing joint activity routines. These were activities, usually of relatively brief time span, organized and structured by the teacher which allowed for and encouraged interactions between the handicapped child and selected non-handicapped peers. Finally, reinforcement strategies were introduced as a means of maintaining social interactions between the

peers and the handicapped child. The research questions addressed by this study were directly related to the measurement of the success of these inservice objectives.

1. As a result of training, was there a significant increase in social interactions between non-handicapped peers and the handicapped children?
2. As a result of training, was there a significant increase in the rate of turntaking exchanges between the handicapped child and his non-handicapped peers?
3. As a result of training, was there a significant increase in the length of the turntaking exchanges between the non-handicapped peers and the handicapped child?

Operational Definitions

For the purpose of this study the dependent variables for both sets of research questions were as follows:

1. Turn:

   Any behavior that is either directly responding to, or initiating, contact with another person.

2. Turntaking exchange:

   A sequence of balanced turns that occurs between two people, and which is not dominated by the occurance of more than 3 consecutive turns from one person. Both participants must use the same form or mode of communication.

3. Mode:

   The behaviors used for the purpose of communication. These were broken down as follows:

a. motor-gestural: use of nonlinguistic motor-gestural behaviors;

b. vocalization: use of nonphonemic sounds;

c. single words;

d. phrases: use of 2 or more words used as a phrase.

4. Imitation:

The direct replication of a behavior, vocalization, single word or phrase, which was emitted by another person.

5. Signal:

A gesture, behavior, vocalization, or verbalization that was intended to convey the message "take your turn".

6. Physical Prompt:

An action, usually requiring physical contact, that was intended to either show the child the desired behavior, or to stop a present behavior.

7. Initiation:

An interactive behavior which was directed towards another person, and which was not in direct response to that person's previous behavior.

8. Length of turntaking exhanges:

This was determined by counting the number of exchanges within a balanced interactive chain of turns.

CHAPTER IV

METHODS

Subjects

Subjects were recruited from daycare centers in central Alberta. The children designated as research subjects had previously been identified as having special needs and were all receiving additional assistance in the daycare setting, either as a part of a small group or as an individual.

The 11 children ranged in age from 3 years, 4 months to 5 years, 4 months, and exhibited a range of handicapping conditions including developmental delays, behavior disorders, motoric disabilities and speech/language disorders. Table 1 lists the characteristics of the children involved in this research.

Settings

The children were enrolled in 3 daycare centres, two within the city of Red Deer and one in the town of Wetaskiwin. All 3 centres were operated as non-profit centres.

All of the programs operated all day, five days per week. They ranged in size from 34 to 80 children, and the focal children were in groups ranging in size from 10 to 25.

Staff qualifications varied in each setting, and consistent care for focal children involved in this study did not always occur. Table 2 contains specific information on the characteristics of each program.

TABLE 1

SUBJECT CHARACTERISTICS

Programme Number	Child Number	CA	Sex	Primary Handicap	McCarthy Scores
01	03	4-05	M	Cerebral Palsy	8-12 mo.*
01	06	3-06	M	Developmental Delay Unknown Origin	73
01	08	3-09	M	Hearing Impairment	78-79
01	09	4-03	F	Developmental Delay Unknown Origin	87-88
01	10	5-04	M	Developmental Delay Unknown Origin	< 50
01	11	4-11	F	Cerebral Palsy	6-16 mo.*
02	02	4-03	F	Developmental Delay Unknown Origin	89-90
02	04	5-01	M	Developmental Delay Unknown Origin	78
02	05	3-04	F	Down's Syndrome	87-88
02	07	4-06	M	Developmental Delay (Autistic Tendencies)	< 50
03	01	3-11	F	Down's Syndrome	< 50

* Range of developmental age equivalents achieved on Developmental Profile.

TABLE 2

PROGRAM CHARACTERISTICS

Programme Number	Location	Total No. Children	Total No. Teachers	Total No. Special-Needs Assistants	Group Size (Range)	No. Handicapped Children
01	Rural	35	7	3	10-25	6
02	Urban	80	14	2	10-25	4
03	Urban	40	6	1	10-20	1

Research Design

A time series research design was used to collect and analyse the information gathered in this study reference. Because of the small numbers of children involved in this study, and the difficulties involved either in employing a control group or of random assignment to treatment, the measurement of behaviors over time, with the insertion of experimental change, was considered to be the most appropriate design. An additional reason for the selection of this design was that the investigation took place in a naturalistic setting, and time series design can be easily and unobtrusively inserted into existing programs.

Since only a small number of children were used in this study, and there was great variance in their developmental needs and levels of functioning, it was considered important to collect and present repeated information on each child. This method, known as single subject design, allows the researcher to determine the magnitude of change for each subject without having to compare groups, and then estimate how results were effected by individual characteristics.

In many time series designs, the effects of the treatment are replicated with a single subject through the alternate application and withdrawal of the treatment (ABAB design). If the same experimental effect can be observed in the separate treatment phases, the strength of the inferences made concerning the intervention is increased as many plausible rival hypotheses accounting for the behavior change can be ruled out (Kazdin, 1973). However, the use of a withdrawal design was not considered to be a viable alternative in this study. There

appeared to be a high degree of probability that a "carry-over" effect would be evident in a withdrawal phase, which would preclude the possibility of retrieving the original baseline levels (Glass et al., 1975). For example, in the case of the inservice, if the staff have learned to respond to the behavior of the handicapped child in a specific manner, they may not have been able to revert to their original manner of interacting with the handicapped child (Hersen & Barlow, 1976).

In addition, the behavior changes which have been produced may be reinforced and maintained through extra-experimental variables which are not under the control of the investigator (Baer, Wolf, & Risley, 1968). For example, it has been demonstrated that the effects of social skills training are maintained after the withdrawal of the programmed intervention. The social behavior of the subject becomes "trapped" into the existing social network, and the naturally occurring reinforcers maintain the increased levels of social interaction (Baer & Wolf, 1970). If it was found that the behaviors of interest did not reverse, no definitive conclusions could be made concerning the treatment effects, since many rival hypotheses could be considered as plausible explanations (Kazdin, 1978).

Requiring that the staff repeatedly apply and then discontinue treatment greatly increases the demands placed on the staff by the study, and they may have been reluctant to cooperate with such a procedure (Hersen & Barlow, 1976). Further, it may not be possible to reliably manipulate the behavior of the young peers acting as behavior change agents. As well, if the intervention strategies resulted in

change perceived to be beneficial by the staff, they may have resisted suggestions to withdraw treatment (Hersen & Barlow, 1976).

In this design, multiple baseline data were collected on the dependent variables for each subject for a period of 4-6 weeks. At this time the first inservice module was presented, and staff were instructed to implement the strategies presented during the inservice training with one or two subjects in their room while baseline conditions were continued for the other sujects. After a 1-3 week interval the treatment was applied to the remaining subjects. The same procedure was repeated following the presentation of the second module. The effects of the treatment can be inferred from the analysis of the data obtained across the subjects (Hersen and Barlow, 1976). See Table 3 for detail of the multiple baseline used.

There is general consensus in the literature that the replication of treatment effects across three or four subjects is sufficient to demonstrate the effects of treatment (Hersen & Barlow, 1976); the replication of the treatment effects across the 11 subjects in 3 different programs in this study strengthens the internal validity of the investigation. Further an analysis of the treatment effects demonstrated across different subjects may assist in the formation of hypotheses concerning the interaction of individual characteristics and the treatment strategies (Leitenburg, 1973).

Data Collection

The Preschool Observation System (Kysela and Barros, 1983) was modified and used as the main tool for recording behaviors in this

TABLE 3

MULTIPLE BASELINE ACROSS SUBJECTS

Centre	Subjects	Week of Observation																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
03	01	A	AA	-A	AA	BB	--	BB	BB	BB	CC	CC	CC	CC	CC	CC	CC	C
02	02	A	AA	AA	AA	BB	BB	BB	--	--	CC	-C	CC	CC	CC	CC	CC	C
01	03	A	AA	A-	-A	BB	-B	BB	-B	BB	CC	CC	-C	CC	CC	--	CC	-
02	07	A	--	AA	AA	AA	BB	--	-B	-B	BB	C-	--	CC	CC	CC	-C	C
01	11	A	-A	AA	AA	A-	-B	BB	--	B-	BB	CC	CC	-C	C-	CC	CC	C
02	04	A	AA	--	A-	AA	AA	BB	B-	--	B-	BB	CC	C-	C-	CC	C-	C
02	05	A	A-	AA	A-	A-	-A	BB	-B	BB	B-	B-	C-	CC	-C	CC	--	C
01	06	A	--	--	AA	AA	AA	B-	-B	BB	B-	-B	CC	C-	--	CC	CC	-
01	08	A	AA	A-	-A	AA	AA	--	-B	BB	-B	BB	C-	CC	C-	C-	C-	C
01	09	A	AA	A-	A-	A-	AA	B-	BB	BB	BB	BB	CC	C-	CC	CC	CC	C
01	10	A	AA	AA	AA	--	AA	BB	B-	BB	B-	-B	C-	C-	CC	CC	CC	-

A = Baseline

B = Ecological Teaching Strategies

C = Peer Training

- = Missing Observation

investigation. This coding system contained possibilities for 9 responses from up to 3 people at any one time. The nine responses consisted of five codes for recording the interactive behaviors of the child, adult or peers. These responses included the behaviors of initiation, response, imitation, signal and physical prompt. A full definition of each of these behaviors is given in Table 4. The remaining four codes were used to record the level of communication used by participants in the interaction. These were motor-gestural, vocalization, single word, and phrase. The operational definitions are included in Table 4.

Observers recorded the behaviors on the already prepared sheets through direct observation in the classroom. Each sheet contained two sets of three separate columns, each of the columns designated to adult, handicapped child, and peer behaviors. The occurrence of the coded behaviors was shown by marking

the appropriate letter with a diagonal slash. If no coded behavior occured within a 10 second interval, a horizontal line was drawn through the three boxes. The format of the data sheet is shown in Figure 1. The data were collected twice weekly for the duration of the investigation. Each 10 minute sample consisted of 5 two minute intervals. This allowed time for observers to collect a representative sample of behaviors, and also allowed them some time to move positions, etc. The timing was ensured through the use of a pre-recorded tape, which marked 10 second and 2 minute intervals. The observers used a single ear-phone in order to minimize intrusiveness within the centre.

TABLE 4

PRESCHOOL OBSERVATION SYSTEM

Behavior Categories	Definition
"B" = Initiation	- a successful or unsuccessful behavior directed towards another person through nonlinguistic motor-gestural behavior, vocalization, single word or phrase of two or more words that was not apparently elicited by another person's immediately preceding motor-gestural behavior, vocalization, single word or phrase.
"R" = Response	- a motor-gestural behavior, vocalization, single word or phrase of two or more words that was apparently elicited by another person's motor-gestural behavior, vocalization, single word or phrase.
"I" = Imitation	- overt repetition of a motor-gestural behavior, vocalization, single word or phrase of two or more words. Imitated utterances must contain all or part of the modeled utterance, with no changes except deletion of morphemes, i.e. "bah" for "ball" or "reh bah" for "red ball".
"S" = Signal	- a motor-gestural behavior, vocalization, single word or phrase or two or more words that was apparently intended to prompt a response from another person which follows a previously unsuccessful attempt.
"G" = Physical Prompt	- physical contact intended to assist other to complete a specific activity or to stop other's actions.

TABLE 4 (Cont'd)

PRESCHOOL OBSERVATION SYSTEM

Modes of Communication	Definition
"A" = Motor-Gestural	- nonlinguistic motor-gestural behaviors.
"V" = Vocalization	- nonphonemic sounds ("h"), phonemic one syllable sounds ("ee") or phonemic multi-syllable sounds ("ee-oo").
"W" = Single Word	- single word or sign.
"P" = Phrases	- phrases containing 2 or more words or signs.

FIGURE 1

DATA SHEET

File: _____

Target Child: _____ School/Centre: _____

Observer: _____ Date: _____

Situation: _____ Duration: _____

Adults Present: _____

Peers Present: _____

Adult	Target Child	Peer	Adult	Target Child	Peer
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P

The observers also noted the physical characteristics of the environment at the time of each observation. This included the situation or activity that the focal child was involved in, the number of children and adults present, and the time of the observation. As far as it was possible, observations were made at the same time of day and when the child was involved in similar activities (i.e. free play). For an example of scoring see Appendix D.

Observer Reliability

A number of precautions were taken with regard to the training and ongoing operation of the observers employed in collecting the data.

The first precaution was that the 4 observers received training on the observation codes. This training took place through direct teaching, group practice using the codes while observing videotapes, and dyad data collection and comparison. The second phase of training took place in the actual classroom settings. When the mean reliability across all observers exceeded 80 percent over four consecutive occasions each of 10 minutes duration, the collection of baseline data began (mean reliability at the onset of data collection was 83% with a range from 81%-87%). Reliability across observers was taken at 2 week intervals throughout the study, and was maintained at 84%, with a range from 60% to 100%: Two observers would simultaneously collect data on 2 children for five, 2 minute segments. Reliability was calculated by dividing the number of agreements by the total of agreements plus disagreements in each two minute segment.

Reliability checks were scheduled across different subjects and across all combinations of observers. (See Table 5.)

The second precaution was that while the observers were very familiar with the behaviors being observed, they were not given any information about whether their observations reflected the changes in behavior which the investigators anticipated. Instead they were commended for the accuracy of their observations at the times of relability checks.

The third precaution taken was that the observers were not informed either about the nature or the timing of the inservice modules.

Finally, the observers were discouraged from any interactions with the subjects, both adult and children. This included making eye-contact, reacting to particular behaviors or events, and answering questions. At the same time the staff in daycare were asked to make no changes in routine or behavior in order to accommodate the observers.

These precautions were taken to prevent possible threats to the reliability of the collected data. The three major threats (Kazdin, 1978) are observer bias, consensual drift, and complexity of the observation system.

The expectancies of the observer regarding possible behavior changes may confound or bias the results of recording observations (Kazdin, 1977). In order to minimize this possibility, the observers were not informed of the time that treatment was implemented, nor of the type or direction of possible behavior changes. In addition, the

TABLE 5

OBSERVER RELIABILITY

		Pre-Investigation						Investigation					
1. Per 2 minute observation	1	77	79	81	86	85	92	84	80	55	84	100	94
	2	86	85	85	86	78	84	91	81	58	91	100	98
	3	81	83	84	79	80	90	83	69	63	83	98	90
	4	89	78	76	91	88	95	88	76	65	88	100	88
	5	82	75	84	90	84	84	79	76	59	79	100	95
2. Total for each 10 minutes observation		83	80	81	87	83	89	85	77	60	85	100	93
		1	2	3	4	1	3	5	7	9	11	13	15
		Trials				Weeks							

Reliability was calculated by dividing the number of agreements by the total of agreements plus disagreements in each of the 5 two minute segments.

results of the data collected by the observers were discussed with them only in terms of quantity and accuracy, not in terms of whether the data reflected desired behavior changes.

The reliability of the results may be confounded due to unnessary complexity in the system of observation. Kazdin (1977) refers to two possible complexities. The first refers to the number of categories within any one observation system. The second refers to the number of behaviors which are being observed wthin any single period of time. In this study, care was taken to ensure that the minimum number of categories which would give accurate information of behavioral changes were used. In addition, interobserver agreement was frequently checked across all phases of the investigation, and included all categories of behavior and all subjects.

Consensual observer drift refers to the possibility that the observers may "drift" from recording the behaviors according to their original definitions (O'Leary & Kent, 1973). If observers work or communicate together this characteristic may not be apparent to the investigator as they may develop similar ways of thinking, and disparity in results may not be apparent. To avoid this process for this investigation the observers' reliability was checked across different combinations of observers.

Internal Validity

"Internal validity refers to the degree of certainty that manipulation of the independent variable is responsible for the observed changes in the dependent variable" (Kratochwill, 1978,

p. 11). It has been widely recognized that the lack of control of many extraneous variables inherent in naturalistic research makes it difficult to maximize the internal validity of such research (Glass et al., 1975; Kratochwill, 1978). The possible threats to the internal validity of this research design, and the steps taken to control these influences is outlined below:

1) History: Historical confounding is a major threat in time-series research, as the data collection extends over a long period of time. Therefore, the probability that extraneous events may cause changes in the data series that are confounded with the true intervention effects increases (Kratochwill, 1978). However, the use of the multiple baseline across subjects (Baer et al., 1968) helps eliminate the plausibility of historical invalidating influences as experimental control is repeatedly demonstrated through the sequential introduction of the intervention across subjects (Kratochwill, 1978).

2) Maturation: It is possible that maturation, or physical and/or psychological changes within the subjects over time, may have affected their performance on the dependent variables (Kratochwill, 1978). However, it has been noted that the potentially confounding influences of this variable can be minimized by the careful analysis of trends in the baseline data (Parsonson & Baer, 1978). The extended baseline period for some subjects that characterizes the multiple baseline design should facilitate this analysis. Further, in regard to the analysis of the effects of the second intervention, (social skills training)

it has been repeatedly demonstrated that, in the absence of intervention, the patterns of social interaction observed in integrated classrooms are relatively stable (Devoney et al., 1974; Peck et al., 1978; Strain et al., 1977).

3) Testing: Confounding due to testing effects can occur when the measurement process itself is a stimulus for change (Kratochwill, 1978). However, as previously discussed, steps were taken to minimize the reactive effects of the observational methodology.

4) Instrumentation: The use of unreliable measuring devices can pose a serious threat to the internal validity of a study, and is of particular concern when data are collected by human observers (Johnson & Bolstad, 1973; Kratochwill, 1978). Again, as previously discussed, caution was exercised in the design and use of the observational methodology, in an attempt to circumvent confounding factors such as observer bias or drift.

5) Multiple Intervention Interference: Due to practical considerations, it was necessary to introduce the two different treatments in the same order to all subjects. Therefore, it is not possible to determine the pure effects of the second module, as the observed effect may be due to some combination of that intervention and the previous inservice training (Kratochwill, 1978). However, it should be noted that since the content of the inservice modules were each directed at changing the behaviors of different groups within the classroom settings (staff and peers), the effects of the second module should be minimally influenced by the prior introduction of the first module.

6) Instability: The degree of variability demonstrated in data series as the result of repeated observation of behavior can pose a significant threat to the internal validity of an experiment. If the variability of the data series is large, it is very difficult to determine whether the observed changes are actually due to the intervention, or are simply part of the naturally occurring variations (Kratochwill, 1978). The significance of this invalidating influence will be discussed in more detail in Chapter Five, as it relates to the data obtained in this study.

7) Reactive Interventions: The internal validity of time series experiments can be threatened if the investigator introduces the intervention as a reaction to a previous or impending change in the data series, which can confound treatment effects with extraneous events that shift the data series in the expected direction (Glass et al., 1975). However, in this study, the baseline and intervention phases of the study were arranged according to a predetermined schedule. Therefore, the deliberate application of the intervention at a time when the data was at extreme values did not occur.

External Validity

External validity refers to the extent to which the findings obtained in a specific investigation can be generalized to other subjects, settings and therapeutic agents (Kratochwill, 1978). It has been repeatedly noted in the research literature that a major difficulty inherent in single subject designs is the inability to

generalize results to subjects not involved in the particular experiment (Hersen & Barlow, 1976; Kazdin, 1973; Kratochwill, 1978). In order to improve the generality of the results obtained in this investigation, the direct replication of the experiments across different subjects was conducted (Hersen & Barlow, 1976). Although ideally the subjects involved would have closely resembled each other, the heterogeneity of the available subjects effectively precluded the possibility of matching subject variables. However, since this heterogeneity is typical in the target population, the evaluation of treatment effects across the fifteen different subjects should increase the confidence with which the effects of the treatments can be generalized to the population of interest.

Further, this investigation sought to improve the generality of the obtained results through the systematic replication of the experiment across settings (Hersen & Barlow, 1976). As a result, the data obtained across settings should suggest the degree to which these results can be generalized to other settings of interest. However, it should be noted that the inservice personnel presenting the training package and providing follow-up consultation were constant across all subjects. Therefore, the effects of this treatment that would be as demonstrated when it is administered by other agents cannot be determined (Hersen & Barlow, 1976).

It should be noted that treatment effects were replicated across both subjects and settings which differed significantly from one another on a number of important variables. This heterogeneity can create significant difficulties when the attempt is made to accurately

interpret treatment effects. That is, if consistent results are obtained, the generality of the findings can be established with a significant degree of confidence. On the other hand, if differential effects are seen, it is impossible to determine which variable or combination of variables are responsible for the observed differences. However, a careful analysis of potentially relevant variables can allow the formulation of many plausible hypothesis which can be pursued in future investigations (Hersen & Barlow, 1976). Therefore, this study will first investigate the possible generality of the treatment effects across a variety of subjects and settings which are typical of those represented in the population of interest, and provide possible avenues to explore in order to effectively modify the training procedures to the unique needs of specific subjects and settings.

In addition to the above mentioned factors, Kratochwill (1978) discusses a number of potential threats to the external validity of an investigation. A discussion of these issues follows.

1) Explicit Description of the Independent Variables: The independent variables under investigation have been described as completely as possible, and the specific materials used were presented. This material should provide the information necessary to estimate the extent to which these results can be generalized to other settings.

2) Multiple Intervention Interference: As previously noted, the order in which the two treatments were introduced poses a threat to the internal validity of this investigation. Further, the

multiple intervention also makes it difficult to determine the generality of these findings to settings in which only one treatment is employed (Kazdin, 1973). However, as previously noted, each module used attempted to change the behavior of different groups within the classroom setting. Therefore, it is believed that the effects demonstrated would be relatively independent of the order of introduction, thus minimizing the invalidating influence of this factor.

3) Hawthorne Effect: It is widely accepted that a subject's knowledge that they are participating in a research study may influence the manner in which they behave in response to the treatment. Therefore, the obtained results may not be generalizable to other subjects who do not have such knowledge.

Further, the reactivity of the observation process may limit the generalizability of the investigation. While it has been demonstrated that preschool age children generally do not alter their behavior in response to the presence of an observer (Johnson & Bolstad, 1973) it is possible that staff may perform differently in situations in which observers are absent. The presence of the observer may function as a discriminative stimulus for the performance of the target behaviors, thus limiting the degree to which the research findings can be generalized to other situations and settings (Haynes & Horne, 1982; Kazdin, 1973). However, as previously discussed, observers were instructed to conduct themselves in a manner which reduces the reactivity of the measurement process.

4) Novelty and Disruption Effects: It has been suggested that experimental effects demonstrated in response to an unusual intervention may be a function of a novelty phenomena, with effects diminishing as the intervention progress. Additionally, an intervention may disrupt the normal environmental routines to the extent that the intervention may be less effective in its initial stages. However, given that the measurement of the treatment effects extended over time, these factors should have a minimal effect on the validity of this design.

5) Experimenter Effects: As previously discussed, given that the same investigator conducted both the training and follow-up consultations, it is possible that the effects of these treatments may not generalize across different experimenters. Invalidity due to experimenter effects can also be the result of observer bias, as the data reported may not accurately reflect the treatment effects. However, as previously discussed, precautions were taken to minimize the threat of observer bias to the validity of this study.

6) Interaction of History and Intervention Effects: The use of the multiple-baseline across subjects design allows the researcher to rule out historical variables as confounding influence. If the treatment effects are replicated across subjects over time, is is highly unlikely that, in each case, the occurrence of a particular historical event could be responsible for the treatment effect.

7) Measurement of the Dependent Variable: The observational code used in this study allowed for the reliable measurement of the dependent measures, as demonstrated through the calculation of inter-observer reliability. Therefore, this factor would not appear to pose a significant threat to the generalizability of the results.

8) Interaction of Time of Measurement and Intervention Effects: The repeated measures which are characteristic of time-series designs generally increase the external validity of a study by demonstrating the presence or absence of a treatment effect over numerous measurement occasions. However, given that the observation periods occurred in a specific situation for each child, it is not possible to determine the degree to which these results can be generalized to other classroom situations.

Content and Design of the Inservice Modules

The inservice modules used in this study were designed to present skills and strategies to childcare workers in daycare centres in order to enhance the interactive skills of young handicapped children integrated into their programs. All of the strategies were taught to the staff members, although the second part of the training had direct implications for the non-handicapped, as well as the handicapped children and staff. The particular strategies taught were based on the model of MacDonald and Gillette (1980) - Ecological Communication Opportunities (E.C.O.).

This model attempts to combine two components of current theories of language acquisition which were the focus of intervention. The first of these, parent-child interactions, stresses the importance of reciprocal social interactions as a source of language use (Stern, 1977). The second, pragmatics, focuses on children learning language by learning how to communicate (Bates, 1976). Bates showed that language emerges from actions that do not initially have communication intention. Pragmatics also alerted professionals to a need to study how a child uses language and how he can be taught to expand its social uses. The E.C.O. model translates these approaches to language acquisition into a set of intervention strategies. It represents "an ecological and conversational approach to communication intervention." (MacDonald and Gillette, 1984, p. 5)

Objectives of the Inservice: Module I

The objective of the first inservice module was to provide the daycare staff with specific skills in the following ecological strategies:

1. To establish balanced turntaking activities with the handicapped children;
2. To increase the rate of use of imitative behaviors by the staff and the handicapped children;
3. To increase the rate of use of signalling and prompting strategies by the staff;
4. To enable the staff to learn to recognize and respond appropriately to the child's communication mode.

Content of Inservice Module I

The E.C.O. model and its rationale were introduced and overviewed. A discussion of problems and typical behavior patterns of young handicapped children was conducted and participants shared their own experiences and reflected upon their own style of interactions. The particular strategies of the E.C.O. model were then presented, using a variety of methods of presentation. These methods included lecture, brainstorming, group discussion, the use of audio-visual materials, and personal reflection. An outline of the format of this module is given in Table 6. The strategies presented were:

1. Turntaking:

   The fundamental strategy of establishing balanced turns with children was stressed. The importance of neither person dominating the interaction by doing most of the talking, acting or deciding was emphasized. The game-like nature of the interchange was also emphasized.

2. Matching mode:

   Taking turns can only occur if the mode or method of communication used by the child is reciprocated by the other person. Any behavior can communicate, and for some children the ability of the adult to interpret and respond to actions as communicative behavior is important in establishing turns. Four possible modes of communication were presented; nonlinguistic, vocal, words, and phrases.

The remainder of the session was spent in teaching and practicing those strategies necessary to establish balanced turns. These

TABLE 6

ECOLOGICAL TEACHING STRATEGIES

PRESENTATION OF CONTENT

Content	Method of Presentation
I. Ecological Teaching Strategies	
A. Rationale	Lecture
B. Common Interaction Problems	Lecture/Visual Aids
II. Turn-Taking	
A. What is Turn-Taking	Lecture/Visual Aids
B. Turn Balance/Dominance	Video-tape models
III. Establishing Turn-Taking	
A. Imitation	Lecture/Video-tape models
B. Matching Modes	
Rationale	Lecture/Visual Aids
Nonlinguistic	Role play/corrective feedback
Vocalization	Role play/corrective feedback
Words/Phrases	Role play/corrective feedback
Assessment	Small group discussion
IV. Maintaining Turn-taking	
A. Structure for Give & Take	Lecture
B. Wait	Video-tape model
C. Signal	Video-tape model
D. Physical Prompt	Live model
E. Model	Live model
F. Summary of Strategies	Role play/corrective feedback
V. Communication Stations	
A. Examples	Lecture
B. Establishing stations	Small group discussions - presentation of ideas to large group
VI. Discussion/Questions	Large group discussion

strategies included waiting expectantly for the child to respond, signalling, using any gesture, vocalization or verbalization which tells the child "take your turn", and physical prompting. These are the strategies suggested by MacDonald (1984), "The wait-signal-prompt sequence becomes a predictable series of contingencies in which the child learns to interact" (MacDonald, 1984, p. 51). A full description of the Inservice Module I is given in Appendix A.

Objectives of Inservice Module I

A major thrust of this study was to attempt to increase the social interactions between handicapped and non-handicapped children in daycare centres.

As a result, this inservice training module was aimed at giving daycare staff the skills necessary to involve the non-handicapped children in those strategies with which they had become familiar at the first inservice module. The training of the daycare staff in these peer-mediated strategies was aimed specifically to achieve the following objectives:

1. That staff would be able to select children who would take on the role of peer-trainer within the classroom;
2. That staff would be able to train these non-handicapped children in specific skills of interaction including:
   a) to initiate an interaction, either verbally or using materials;
   b) to respond to an initiaton from a handicapped peer;
   c) to maintain interactive behavior by taking turns;

d) to use strategies of signalling and prompting in order to cue the handicapped child to take her/his turn;

3. That staff would provide structured opportunities for the non-handicapped and handicapped children to interact together. These situations were termed Joint Task Activities
4. That staff would consistently use reinforcement strategies, contingent on the interactive behaviors demonstrated by the non-handicapped children towards the handicapped child in incidental situations throughout the day.

Content of Inservice Module II

The rationale for involving peers directly in the intervention strategies was reviewed. This logic included reference to the research of Field (1981), Guralnick and Paul-Brown (1977), Strain et al. (1976) which indicated that child-child interactions are an important pre-requisite in the development of a broad array of competencies in the cognitive, language, social, and motor domains. The rationale for using peer-mediated strategies was emphasized and included:

1. Peer-mediated strategies require less active teacher involvement;
2. Peer-mediated strategies have been associated with direct treatment gains at least equal to those associated with adult-mediated strategies (Hartup, 1978);
3. Higher level of generalization and maintenance of behavior change are associated with peer-mediated strategies (Strain et al., 1981).

The notion of peer training and the importance of being able to initiate and maintain interactions was related directly to the work of Hops, Guild, Fleishman, Paine, Street, Walker and Greenwood (1978), and Strain and Folk (1981). An outline of this module is given in Table 7. The four main objectives of the inservice module were then taught.

1. Selecting Peers

Staff were given criteria to look for in selecting between one and three children to act as peer trainers. These criteria included identifying a child who was:

1. "normally" developing;
2. of the same sex, with;
3. with a high rate of social initiations;
4. who attends regularly.

The selection of materials appropriate for turntaking activities was reviewed, and the specific training procedures for the peers were taught.

2. Joint-task Activities

The notion of joint task activities, as developed by Hops et al. (1978), in the PEERS program, was outlined. Its objective, to provide

opportunities for the handicapped child to interact with her/his peers on a daily basis over an extended period of time, was emphasized.

The procedures for implementing appropriate activities, which require turntaking and which can occur within an appropriate mode

TABLE 7

USE OF PEERS TO FACILITATE SOCIAL INTERACTION

PRESENTATION OF CONTENT

	Content	Method of Presentation
I.	Peers as Change Agents	
	A. Rationale Social Skills Training	Lecture/Visual Aids
	B. Why Use Peers?	Lecture/Visual Aids
II.	Joint Task Activities	
	A. Introduction	Lecture
	B. Selection of Activity/ Materials	Small group discussion. Presentation of ideas to large group
	Implement Joint Task	Lecture
III.	Social Initiation Training	
	A. Rationale	Lecture/Visual Aids
	B. Selecting Trainers	Small group discussion
	C. Selection of Materials	Lecture
	D. Training Procedures	Role play/Corrective Feedback
	E. Prompting & Reinforcement	Lecture
IV.	Contingent Social Praise	Lecture
V.	Discussion/Questions	Large group discussion

for the handicapped child, were then covered. These procedures included selection of activities, gathering of materials, scheduling and regular time, and selecting a different peer to participate.

3. Social Reinforcement

Strategies for generalizing and maintaining the social interaction skills between handicapped children and their peers were taught. These included "quickie praise", so as not to interrupt the ongoing flow of interactions, and the placing of tokens in the form of stars on a wall chart.

A full description of Inservice Module II is given in Appendix A.

Evaluation of Inservice

This evaluation was conducted in two ways. The first was by means of an informal questionnaire given to each participant at the end of the research phase of this project (see Appendix A). The second, and more thorough evaluation, was via direct observation of the staff and children within the natural classroom setting, employing the previously described observation system.

Investigation Implementation

After children had been identified by the staff of the daycare centres, and their suitability for inclusion in the study verified by the investigators, baseline observations were started. After 4 weeks of baseline observations, teachers participated in a three hour

inservice training session (Module I). The strategies taught at that session were then implemented by the staff, with the initiation staggered across the children in order to meet the requirements of the multiple-baseline across subjects design. See Figure 2 for the design of the multiple-baseline across subjects.

Throughout the first two weeks following this training session, the investigator made follow-up visits to the centres in order to encourage the staff's use of the strategies and to answer questions and model any specific techniques.

The second inservice training session took place 6-8 weeks following the first. The same procedures were followed until completion of the investigation after 17 weeks.

CHAPTER V

RESULTS

The results of this investigation are graphically presented to correspond to the research questions posed in Chapter III. The effects are described briefly with each set of graphs, while a more detailed discussion of the results and their implications is given in Chapter VI. The results are organized to show each subject within his/her centre. Subject 3, Centre 1 is shown above. Subjects 2, 7, 4, and 5 from Centre 2 are clustered together; and subjects 11, 3, 6, 8, 9, 10, Centre 3 are clustered.

A. Inservice Module #1: Ecological Teaching Strategies

Research Question #1:

As a result of training, was there a significant increase in the rate of the instructional staff's use of the ecological teaching strategies:

a. Imitation

b. Signal

c. Physical Prompt

The data presented in Figures 3 through 8 show that the instructional staff did not use, or made only minimum use of Imitation during their interactions with the handicapped child during all phases of the study. There was more use of Signal and Physical Prompt, although these were used so inconsistently that it is difficult to tell if the use of the strategies was contingent upon the inservice training.

A comparison of the rate of use of the ecological strategies (Figures 9 through 17) by centre, also fails to show any significant trend. The most notable factor once again is the absence of use of imitation as a means of communication.

FIGURE 3

Rate of Use of Ecological Strategies: Staff to Handicapped Child: Subject 1

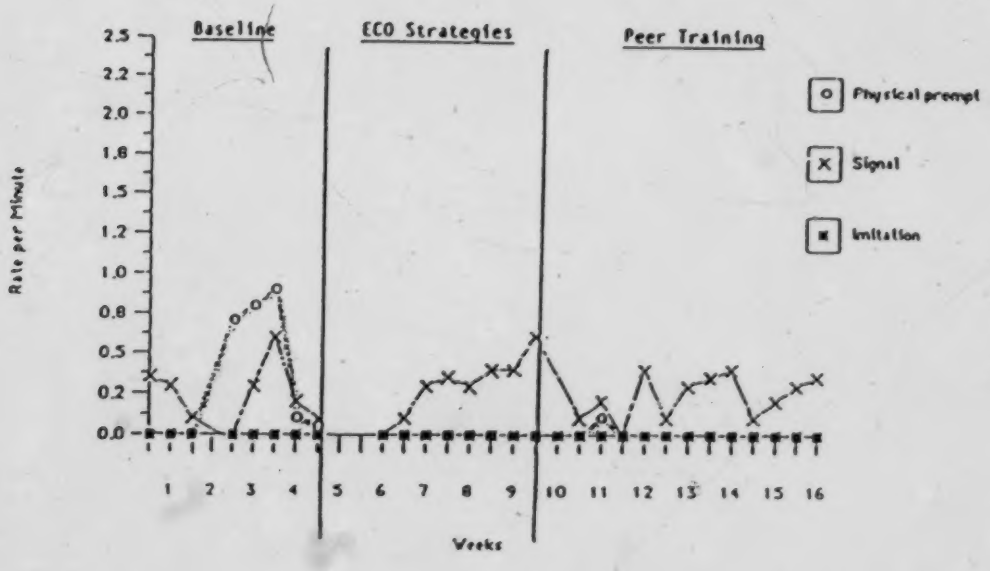


FIGURE 4

Rate of Use of Ecological Strategies: Staff to Handicapped Child: Subject 2

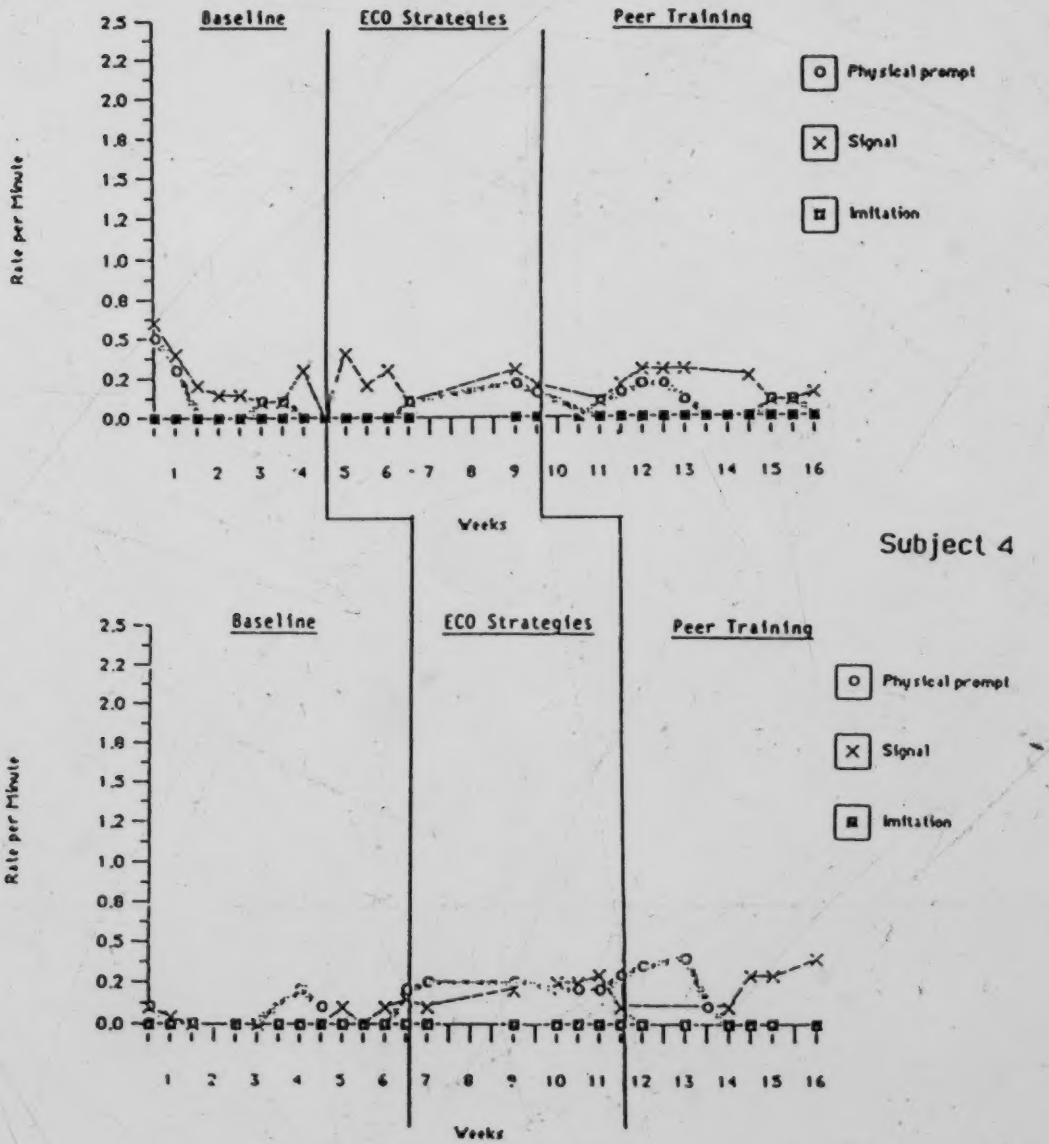


FIGURE 5

Rate of Use of Ecological Strategies: Staff to Handicapped Child: Subject 5

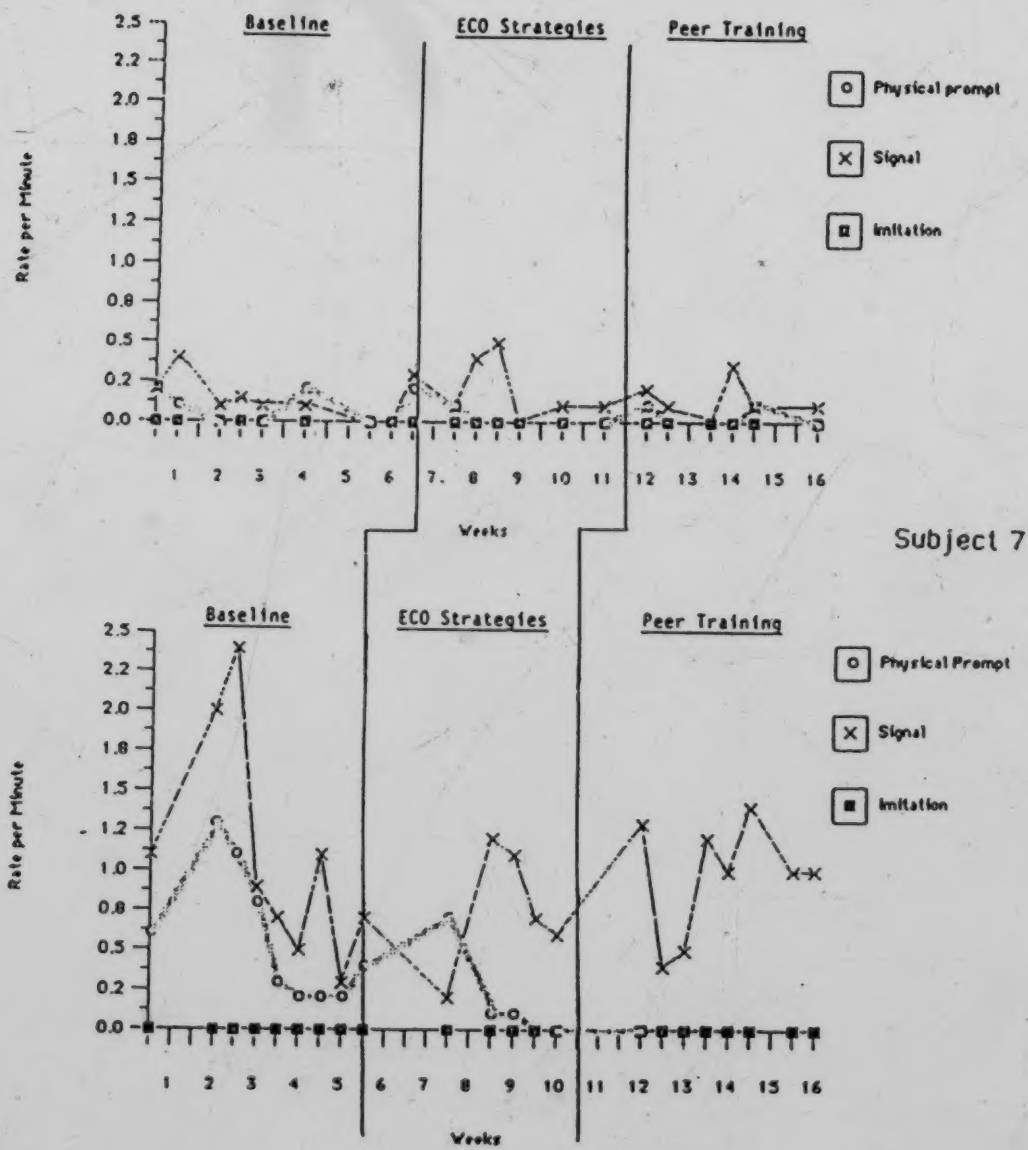


FIGURE 6

Rate of Use of Ecological Strategies: Staff to Handicapped Child: Subject 3

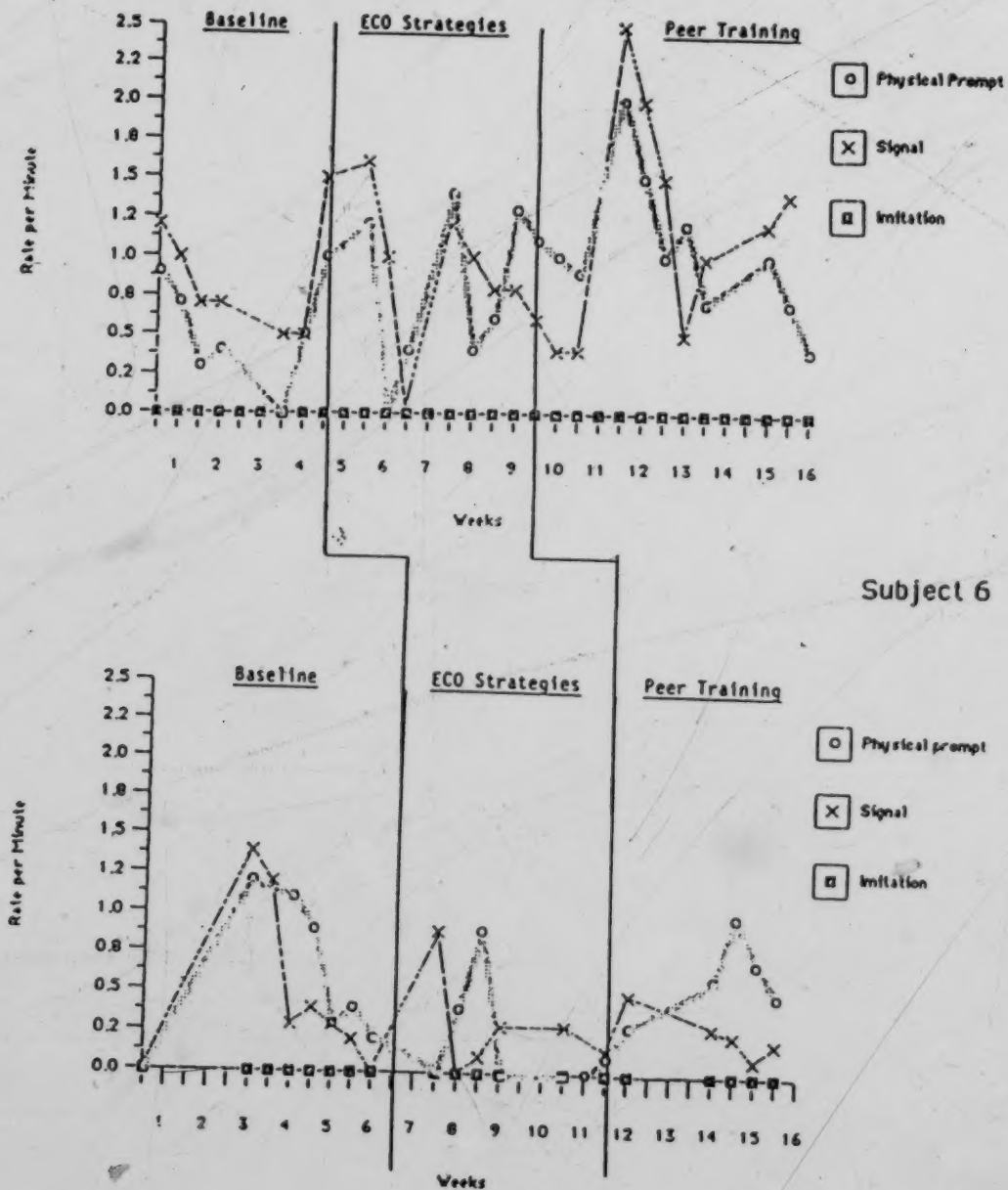
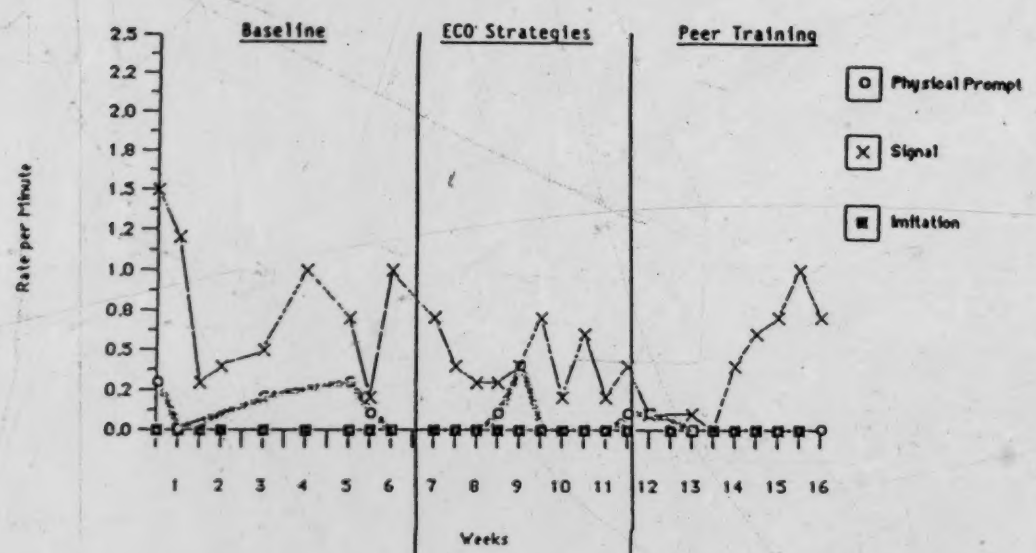


FIGURE 7

Rate of Use of Ecological Strategies: Staff to Handicapped Child: Subject 9



Subject 10

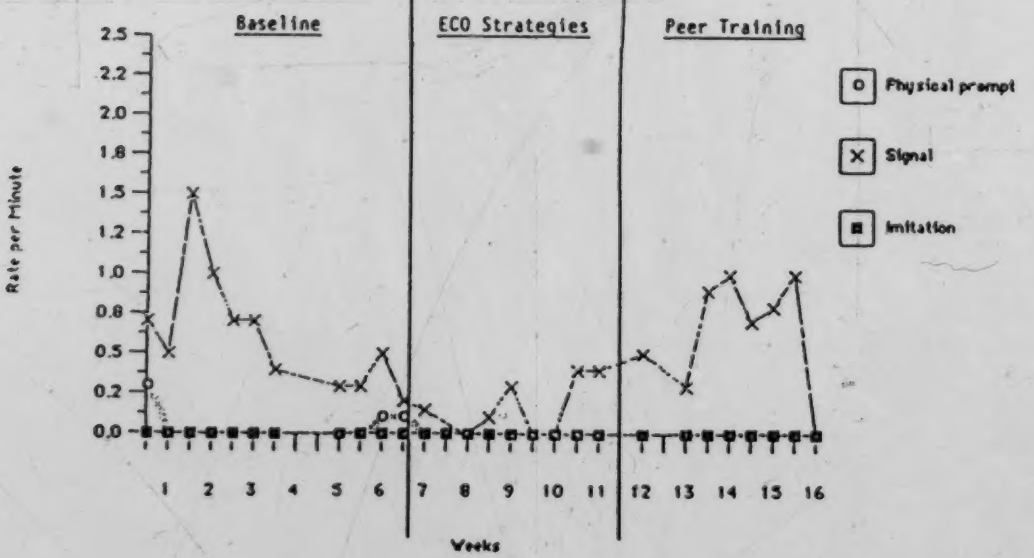
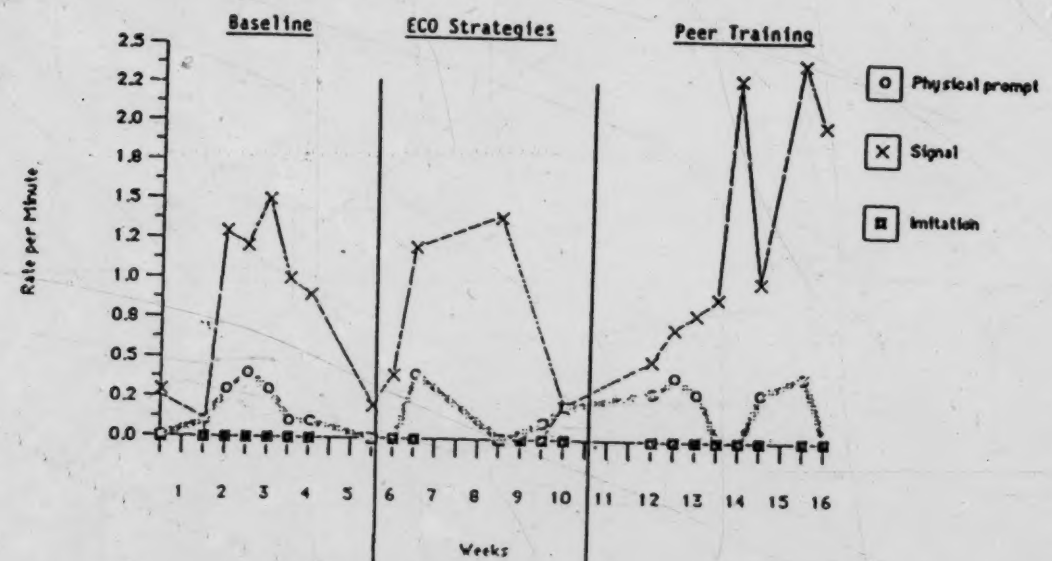


FIGURE 8

Rate of Use of Ecological Strategies: Staff to Handicapped Child: Subject 11



Subject 8

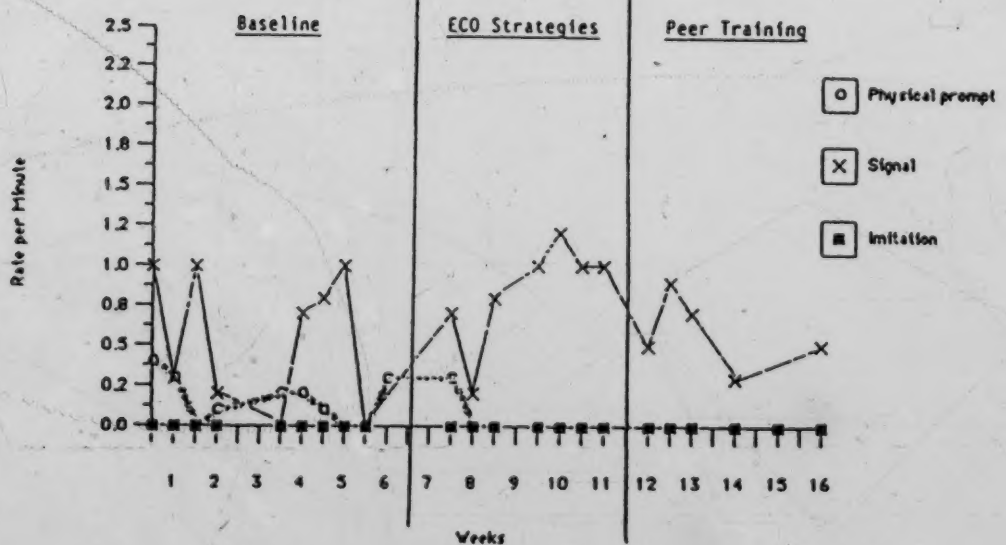


FIGURE 9 - Rate of Use of Physical Prompt: Centre One

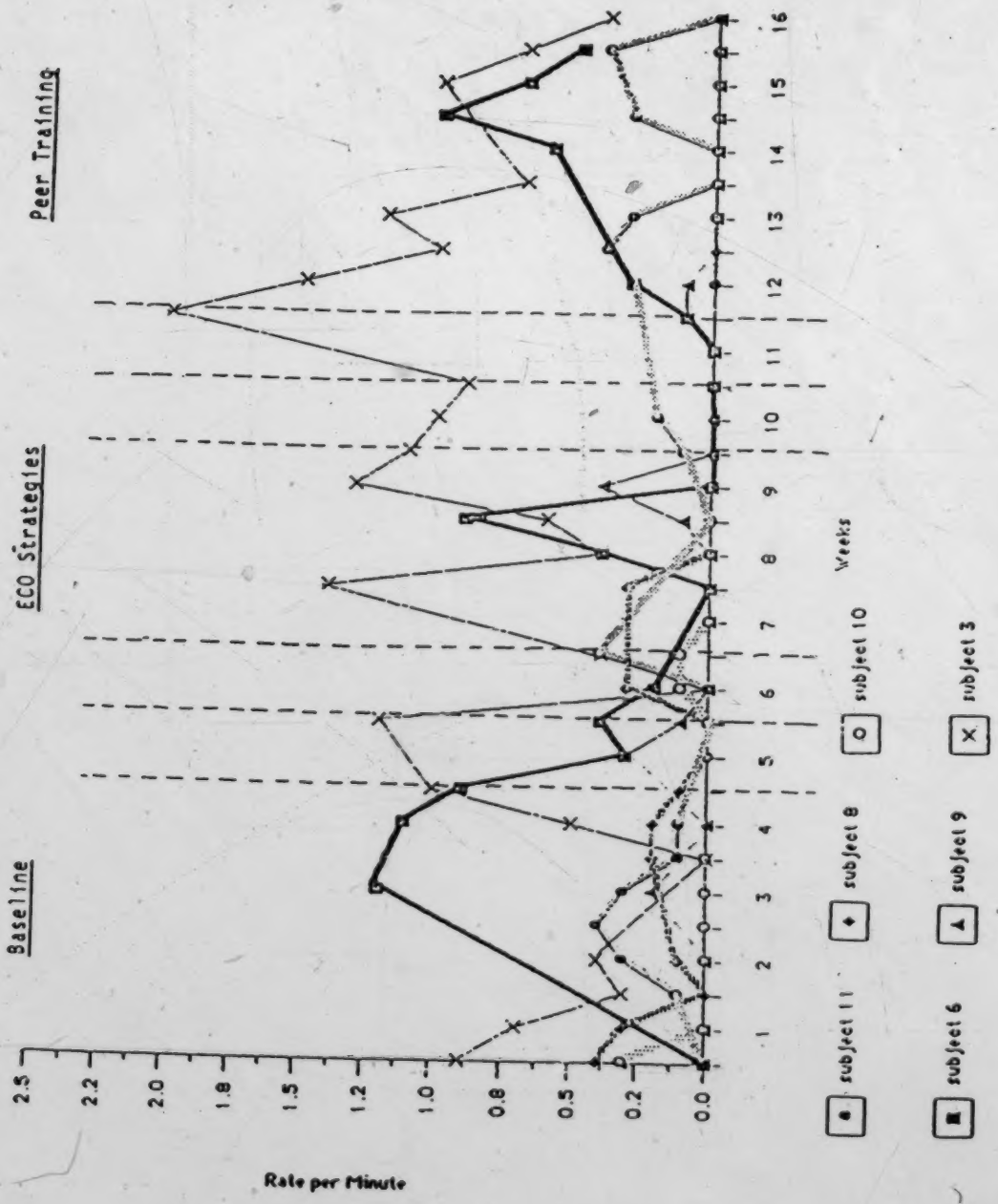


FIGURE 10 - Rate of Use of Signals: Centre One

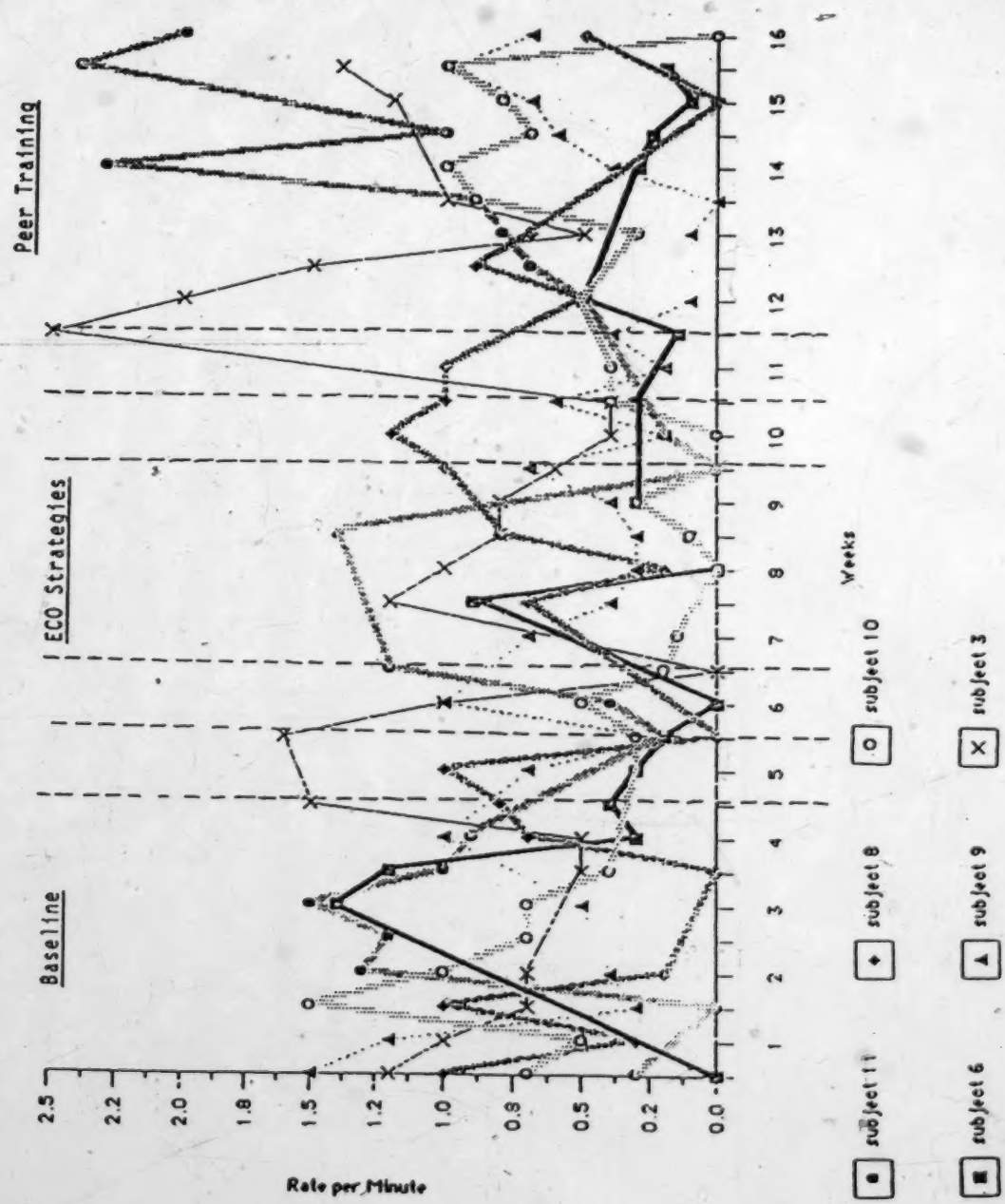


FIGURE 11 - Rate of Use of Imitation: Centre One

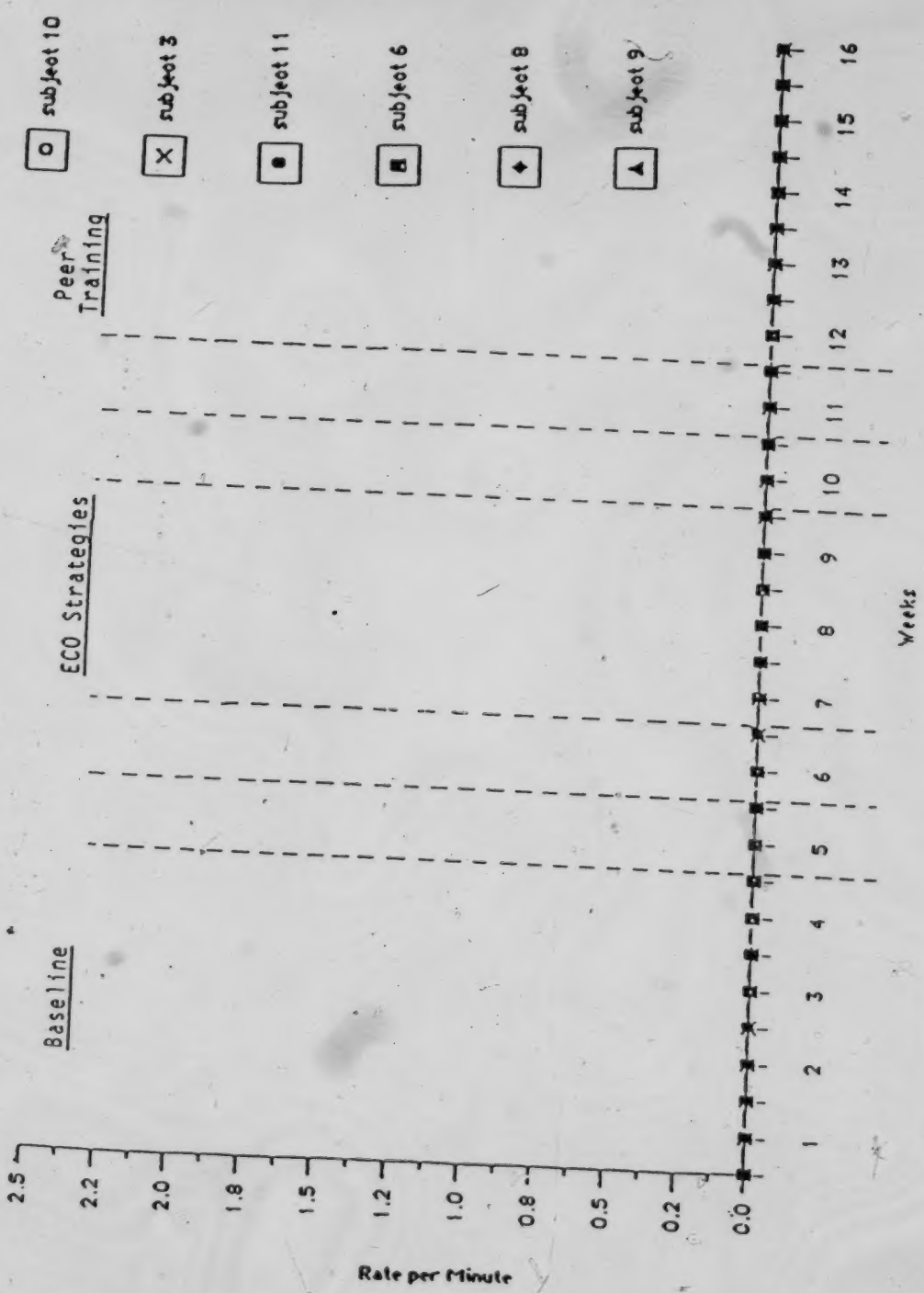


FIGURE 12 - Rate of Use of Physical Prompt: Centre Two

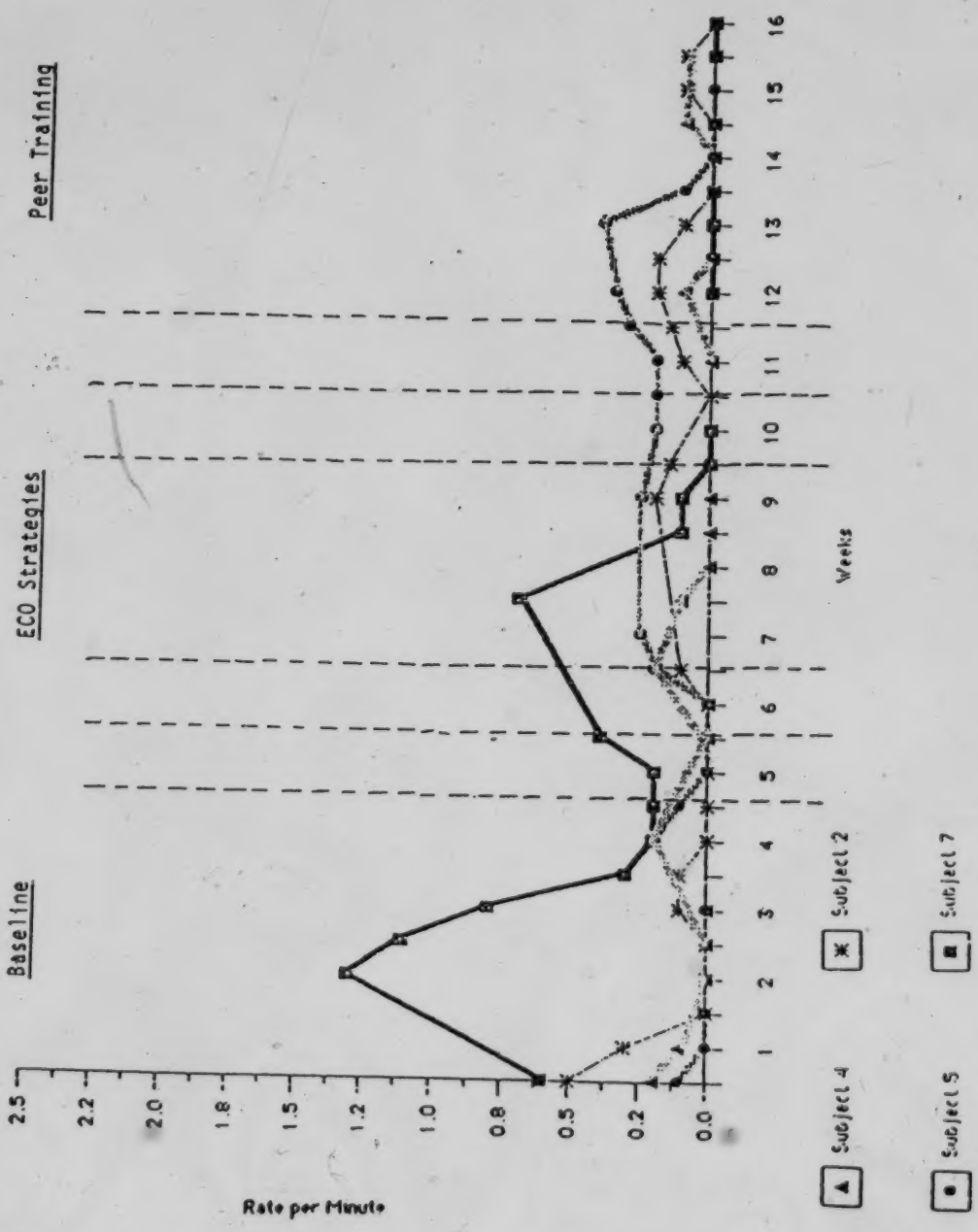


FIGURE 13 - Rate of Use of Signal: Centre Two

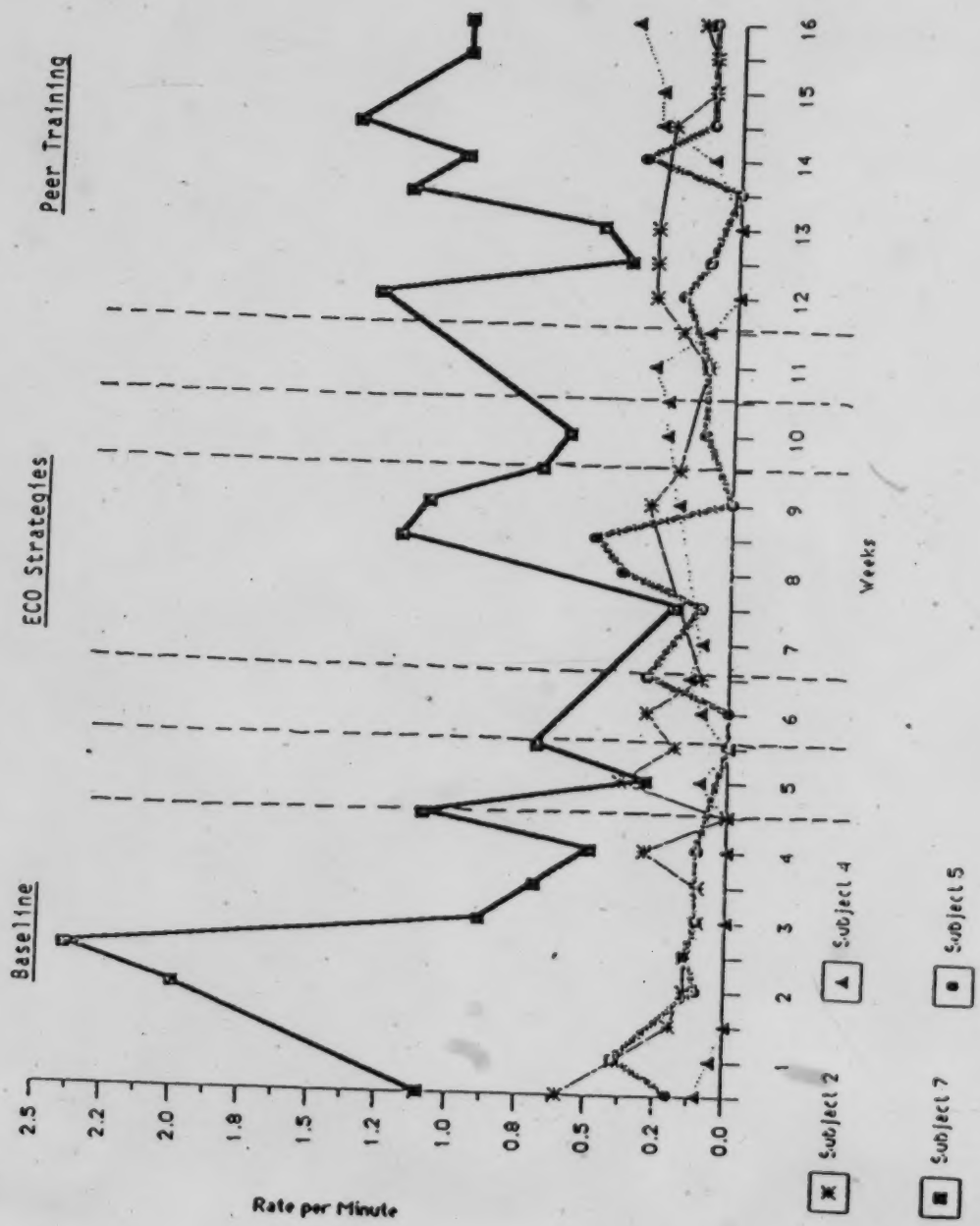


FIGURE 14 - Rate of Use of Imitation: Centre Two

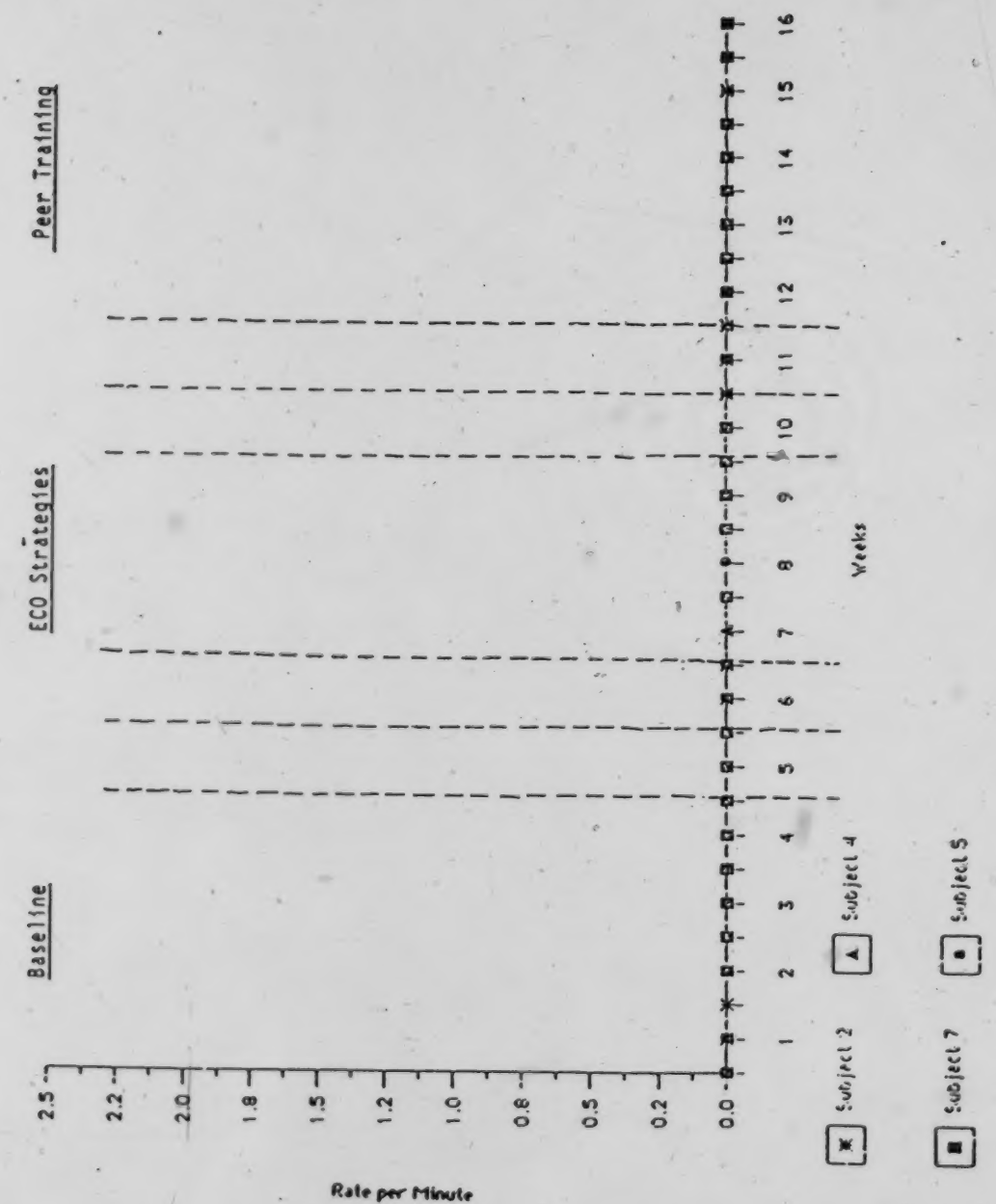


FIGURE 15 - Rate of Use of Signal: Centre Three

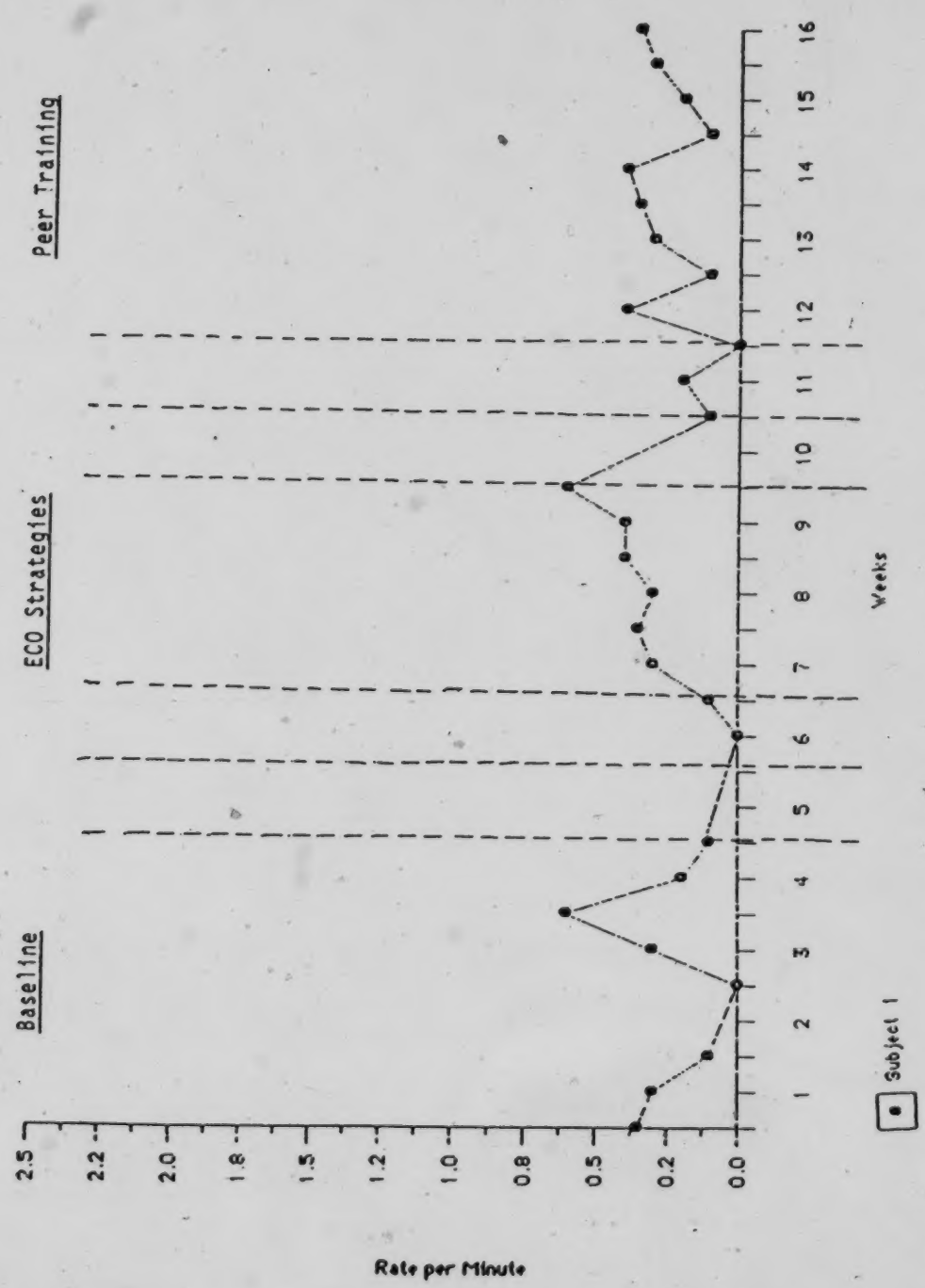


FIGURE 16 - Rate of Use of Imitation: Centre Three

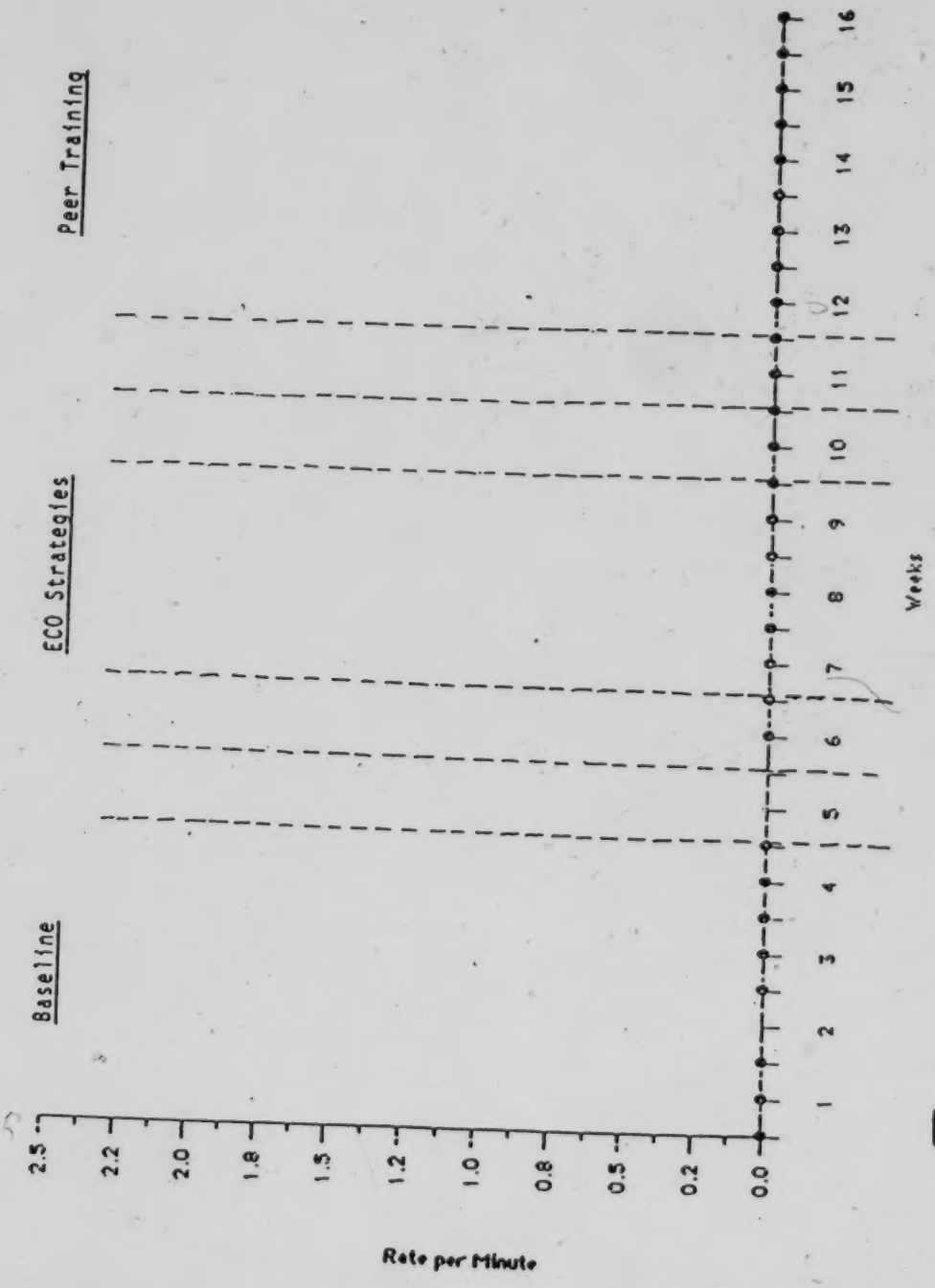
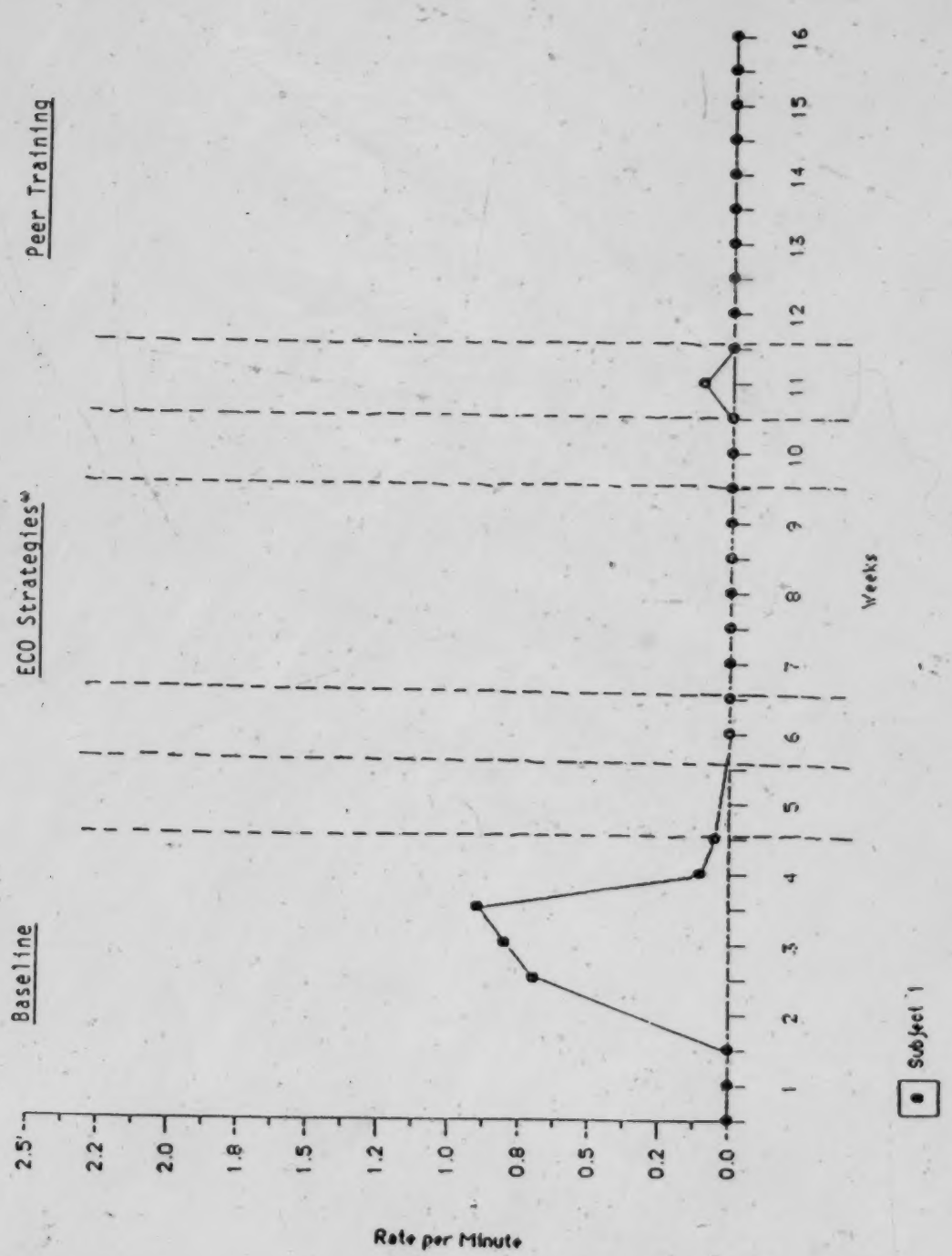

Peer Training
ECO Strategies
Baseline
Weeks
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
2.5 2.2 2.0 1.8 1.5 1.2 1.0 0.8 0.5 0.2 0.0
Rate per Minute
Subject 1

FIGURE 17 - Rate of Use of Physical Prompt: Centre Three



Research Question #2

As a result of training, was there a significant increase in the rate of turntaking exchanges between the instructional staff and the handicapped child.

Visual analysis of the data presented in Figures 18 through 24 indicated that there was variability in the rate of turntaking exchanges occuring between the staff and the handicapped children. For some children there was a slight upward trend during both treatment phases; while for others turntaking exchanges were rarely observed throughout the duration of the study.

FIGURE 18

Rate of Turns: Instructional Staff

01

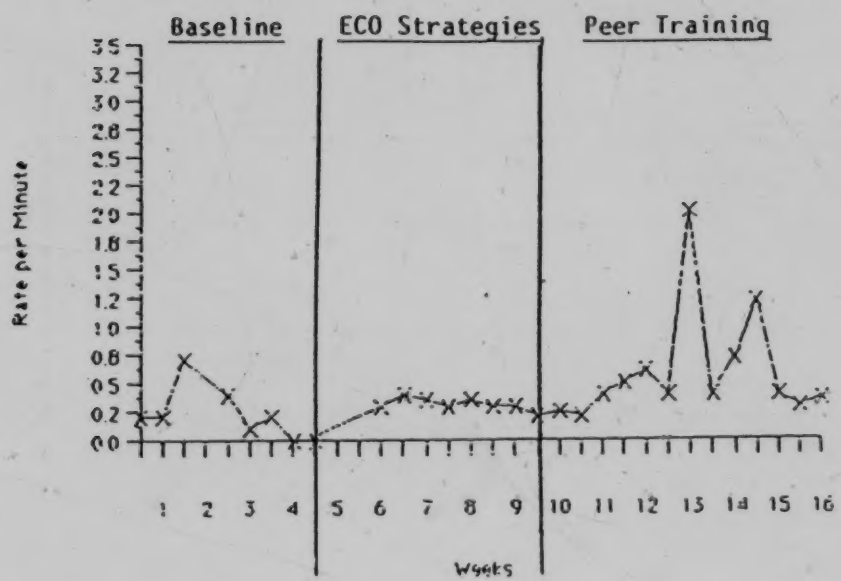
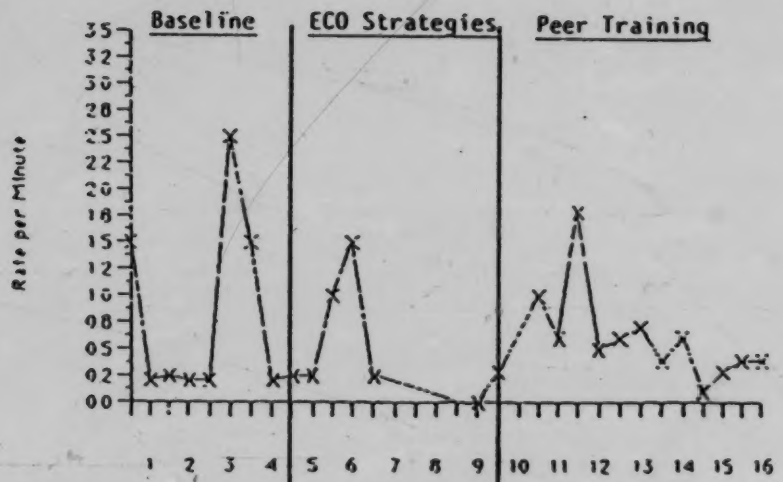


FIGURE 19 - Rate of Turns:Instructional Staff

02



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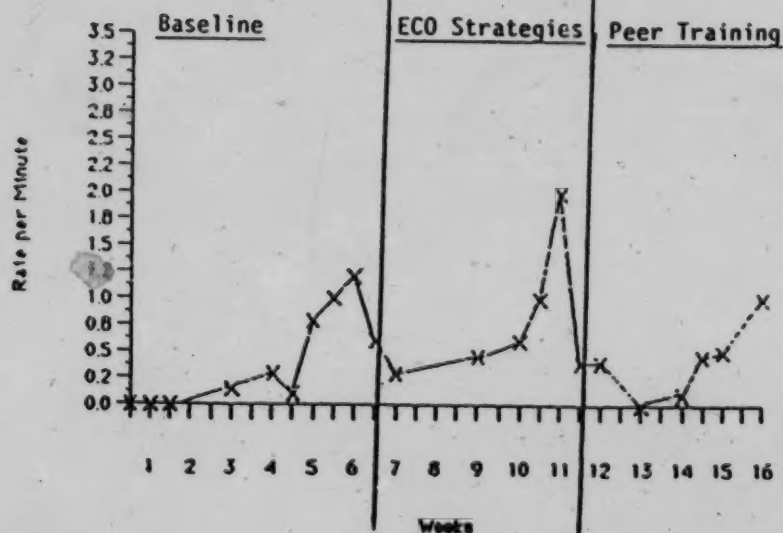
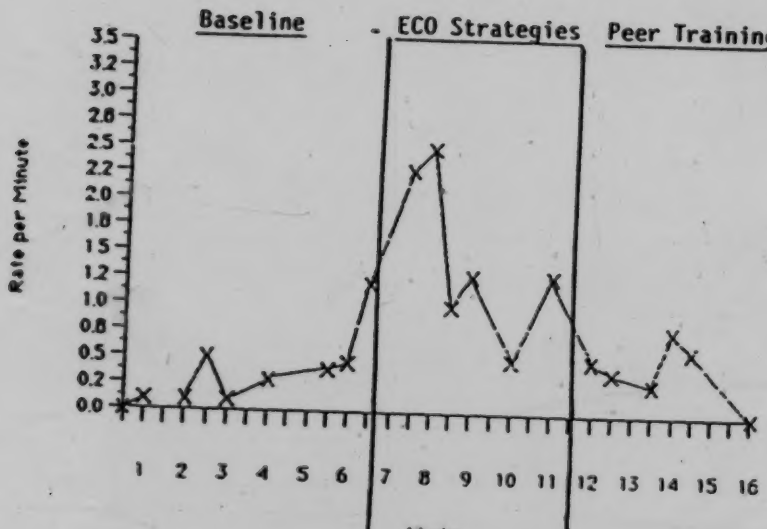


FIGURE 20 - Rate of Turns: Instructional Staff

05



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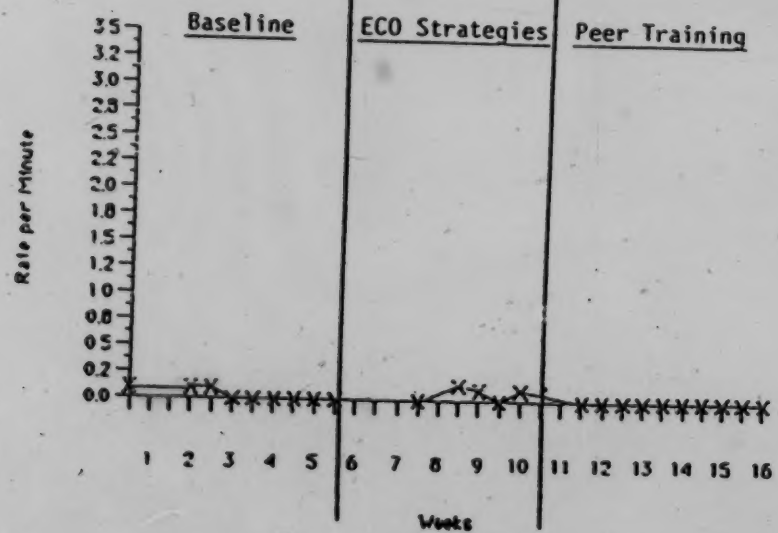
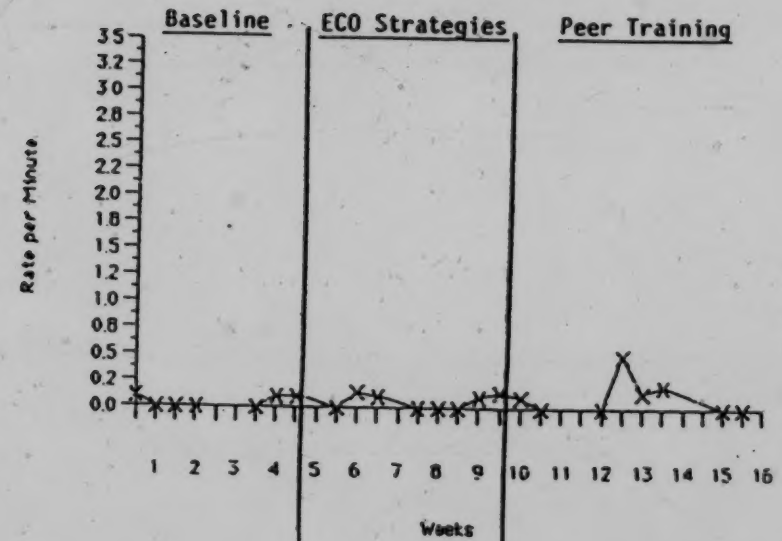


FIGURE 21 - Rate of Turns: Instructional Staff

03



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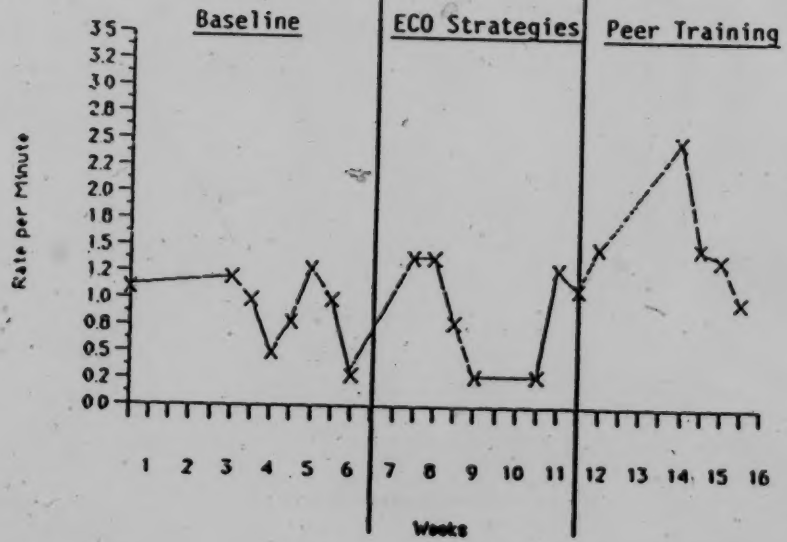
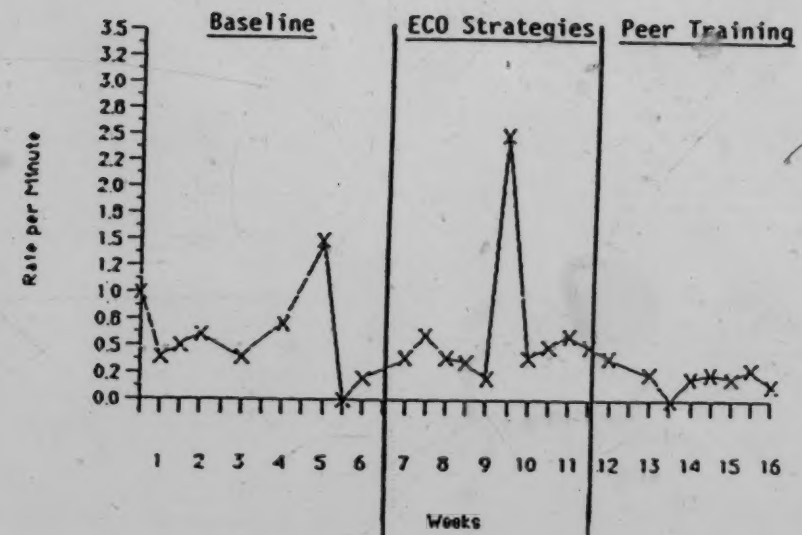


FIGURE 22 - Rate of Turns: Instructional Staff

09



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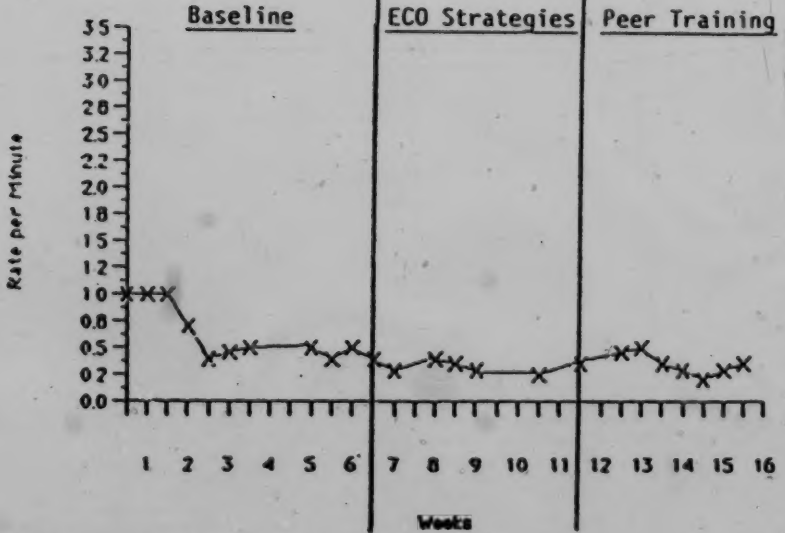
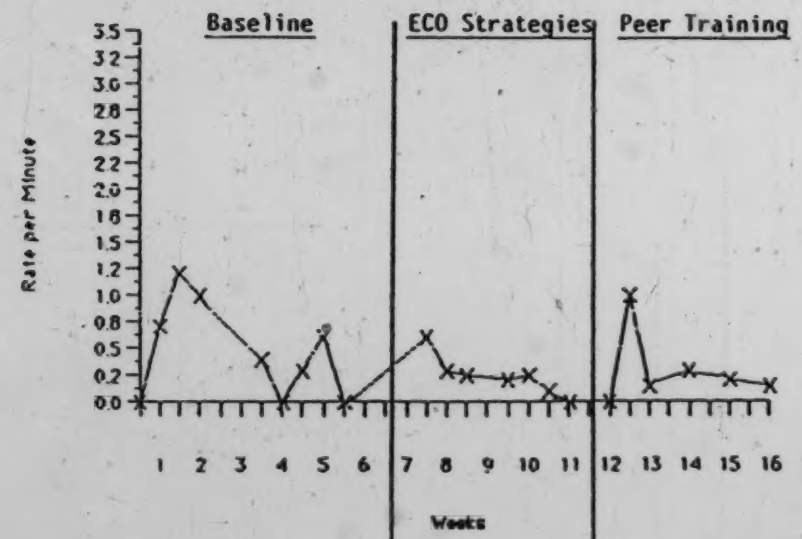


FIGURE 23 - Rate of Turns: Instructional Staff

08



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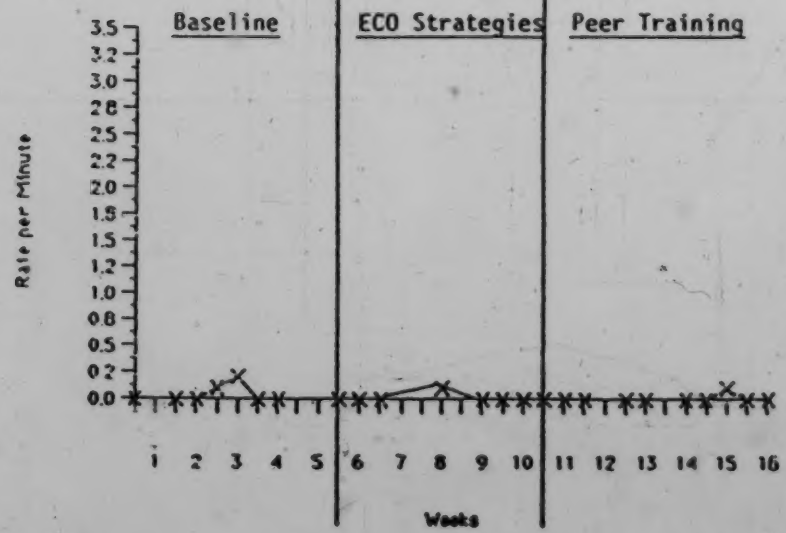
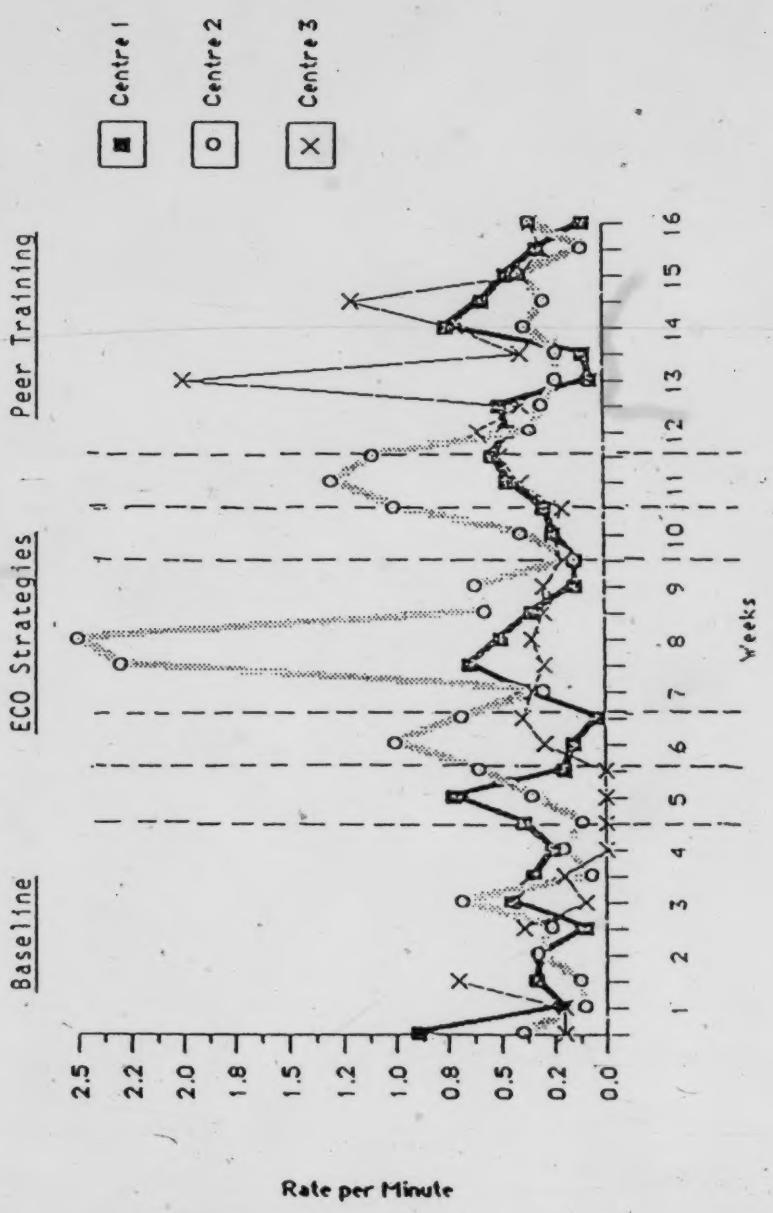


FIGURE 24

Rate of Turns: Instructional Staff

Three Programs Compared


Centre 1
Centre 2
Centre 3
Peer Training
ECO Strategies
Baseline
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Weeks
2.5 2.2 2.0 1.8 1.5 1.2 1.0 0.8 0.5 0.2 0.0
Rate per Minute

Research Question #3

As a result of training, was there a significant increase in the length of the turntaking exchanges between the instructional staff and the handicapped child?

The data presented in Figures 25 through 30 show that in general there was an increase in the mean length of the turntaking exchanges between the staff and the handicapped children, which was associated with the introduction of treatment. However, there were a number of cases in which this trend was not evident. Even in those which did show an increase there was a considerable degree of variability. It was seen that the turntaking exchange, as a behavior pattern, was relatively unstable.

FIGURE 25

Average Length of Turntaking Exchanges: Staff and Handicapped Child

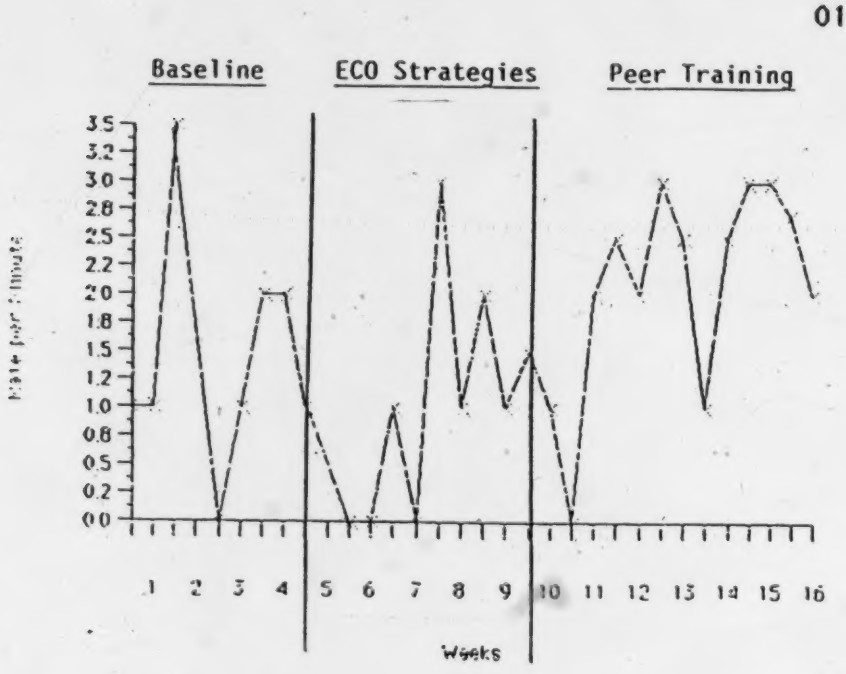


FIGURE 26 - Average Length of Turntaking Exchanges: Staff and Handicapped Child

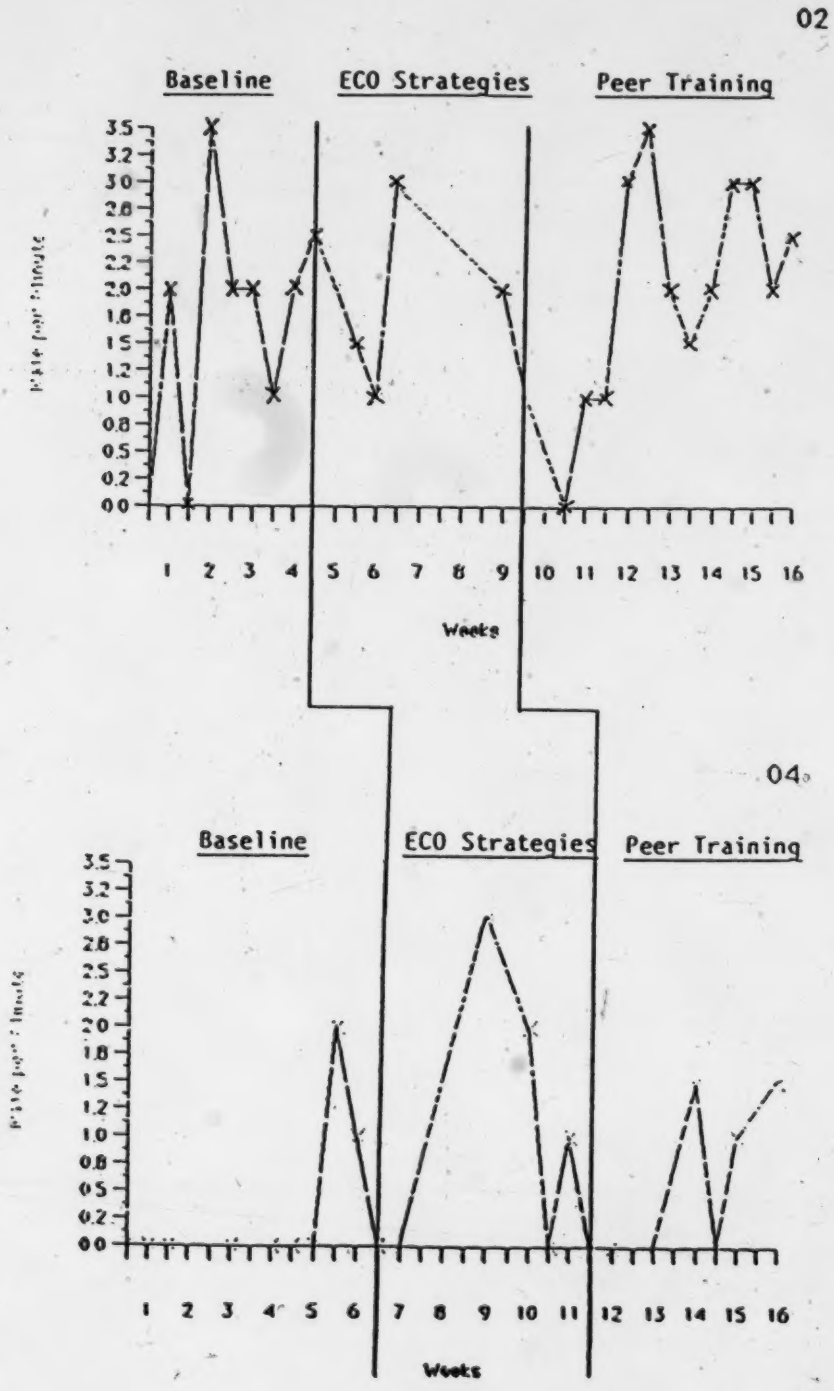


FIGURE 27

Average Length of Turntaking Exchanges: Staff and Handicapped Child

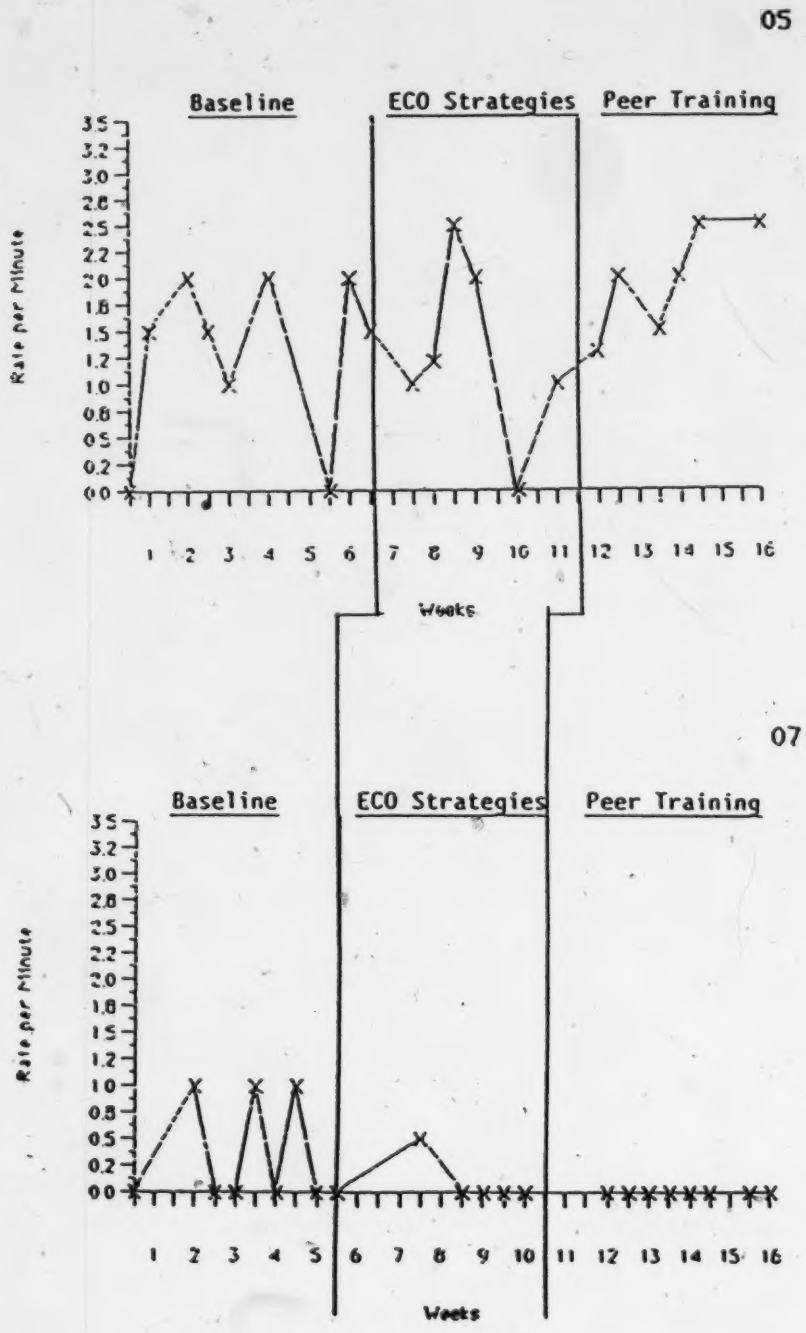


FIGURE 28

Average Length of Turntaking Exchanges: Staff and Handicapped Child

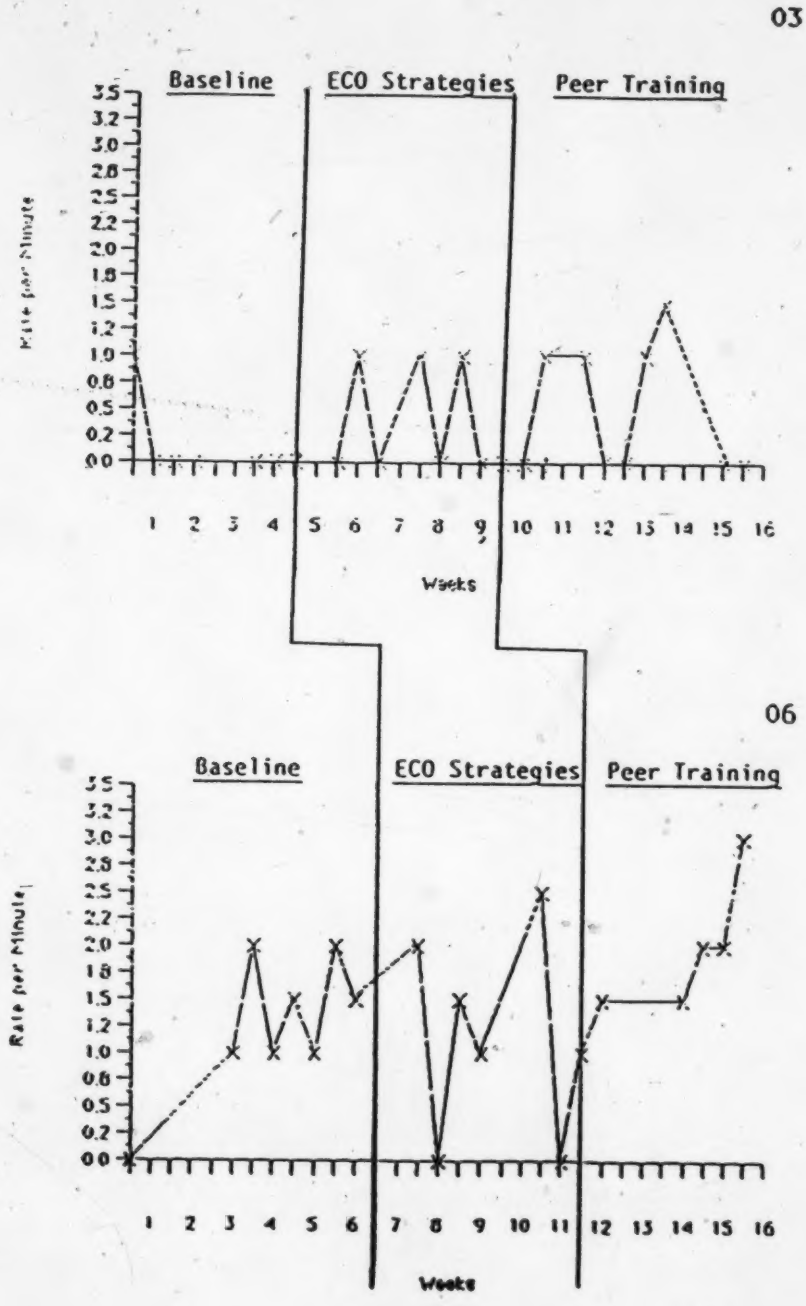


FIGURE 29

Average Length of Turntaking Exchanges: Staff and Handicapped Child

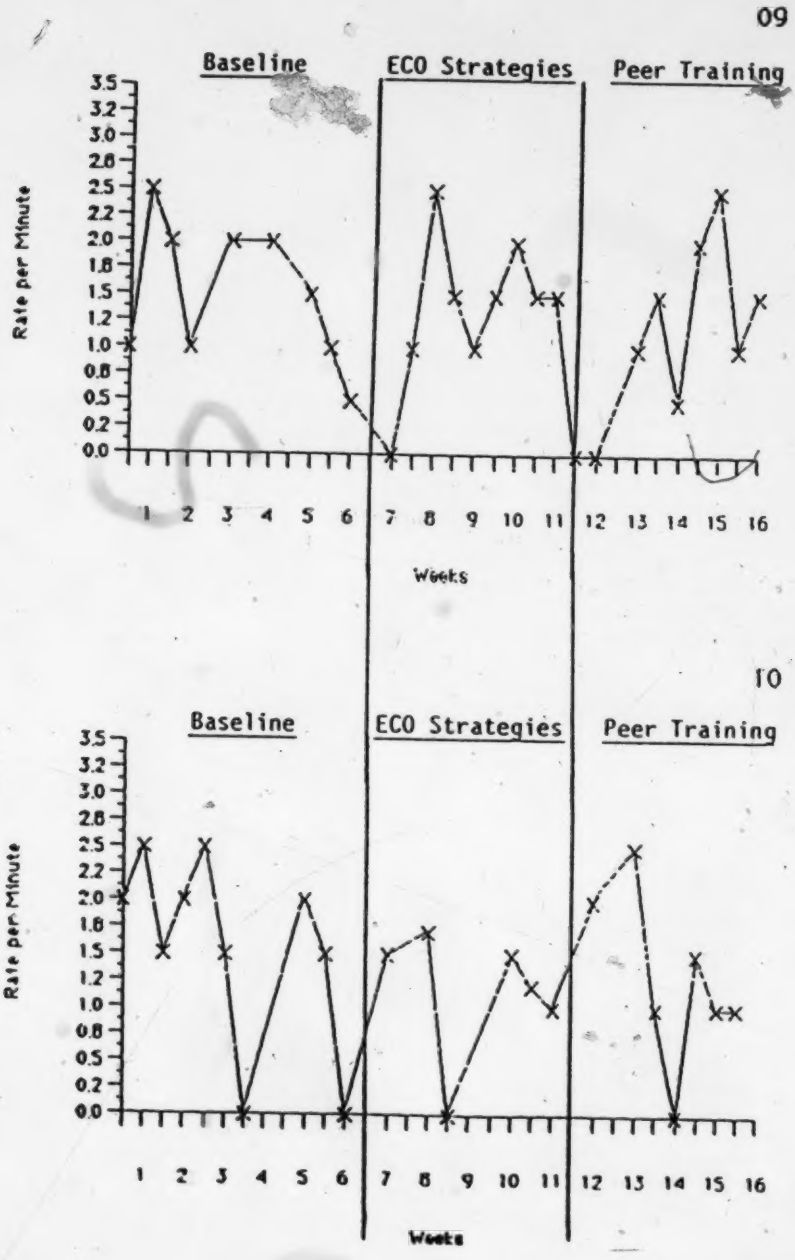
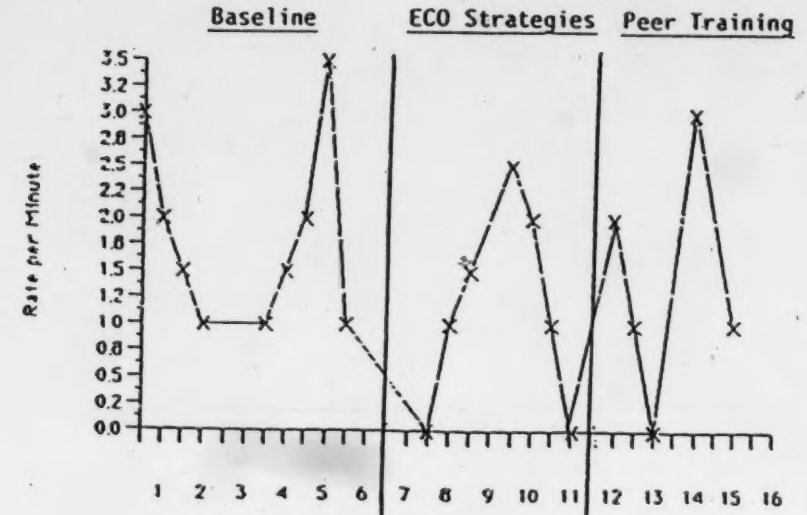


FIGURE 30

Average Length of Turntaking Exchanges: Staff and Handicapped Child

08



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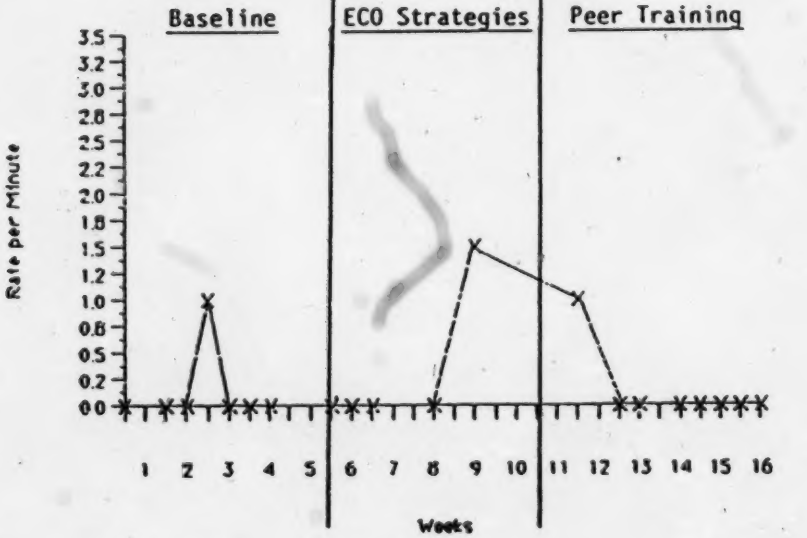


Summary

The data gathered on the interaction patterns between instructional staff and handicapped children during the time of the first inservice module show that there was an increase in the rate of turntaking exchanges. However, this finding was not consistent across all subjects. The ecological strategies used by the staff to achieve these turntaking exchanges also showed inconsistency. Imitation was rarely used at any stage of the study, and while signalling and prompting were used at a much higher rate, there was considerable variability in their use.

Subjects 3, 7, and 13 demonstrated no increase in turntaking behavior, even though the staff frequently used signalling and prompting. However, their use of these strategies did not reliably increase with the training sessions, and they did not use Imitation as one of these strategies.

B. Inservice Module #2: Training Non-handicapped Peers

Research Question #1

As a result of training, was there a significant increase in the social interactions of non-handicapped peers and the handicapped children?

An increased level of social interactive behavior following the peer mediated treatment was evident for some children. However, the data were characterized by a general lack of consistency across subjects. Peers interacting with subjects 4 and 7 showed only minimal levels of social interaction behaviors throughout the study; while moderate increases were evident for subjects 8, 9, 10, and 11.

FIGURE 31

Rate of Social Behaviors: Peers to Handicapped Child

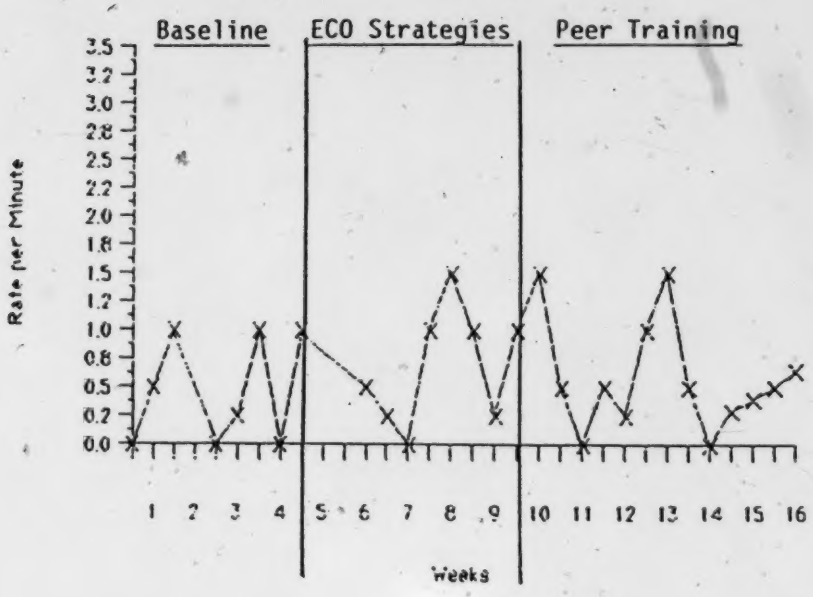


FIGURE 32 - Rate of Social Behaviors: Peers to Handicapped Child

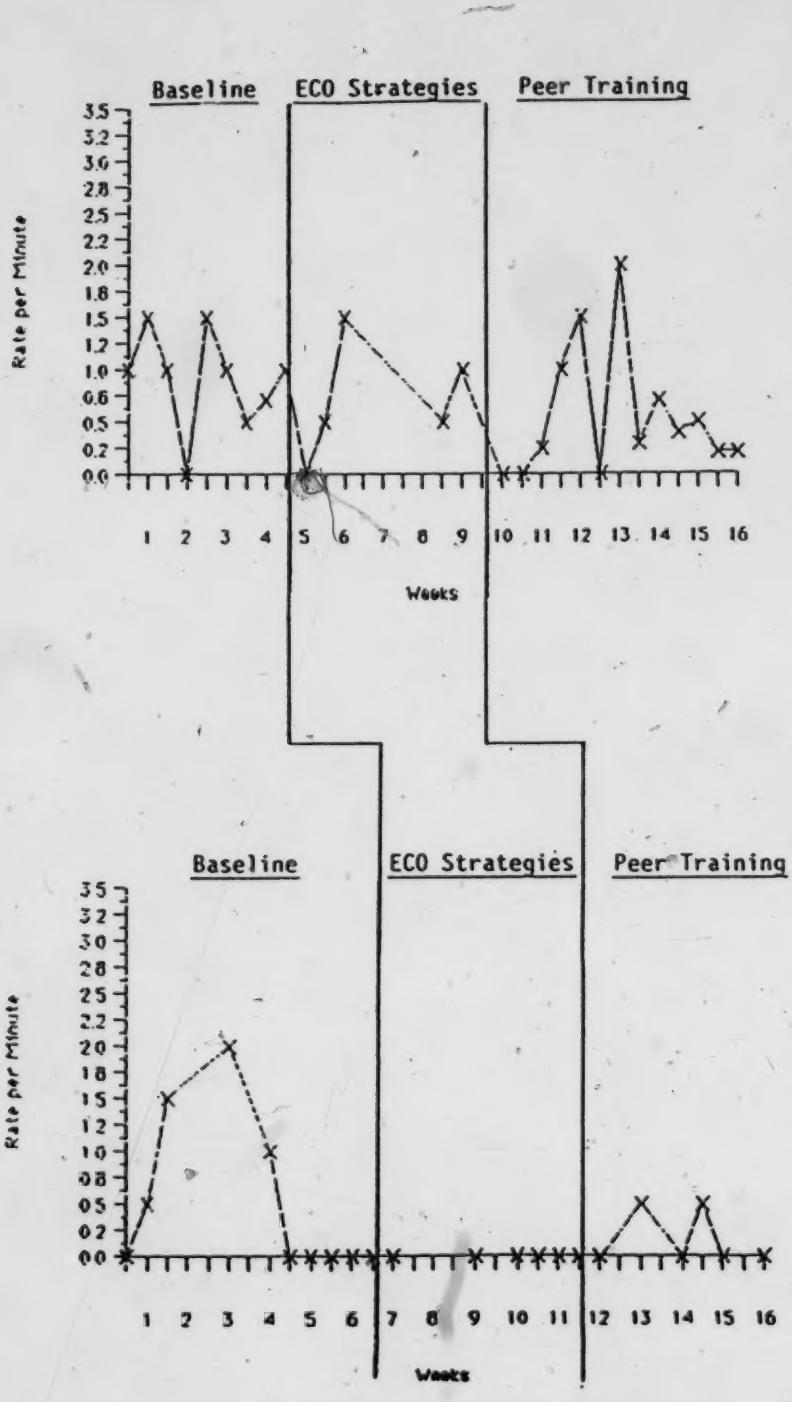
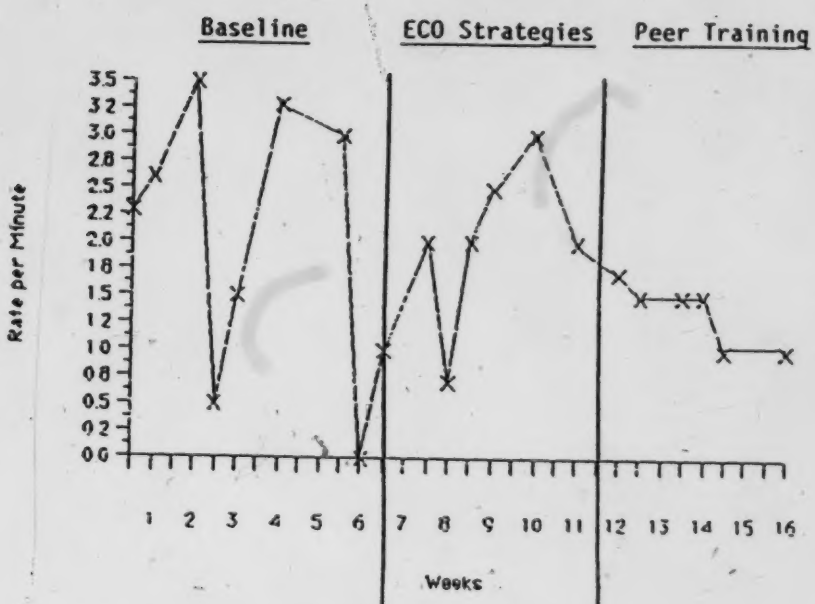


FIGURE 33

Rate of Social Behaviors: Peers to Handicapped Child

05



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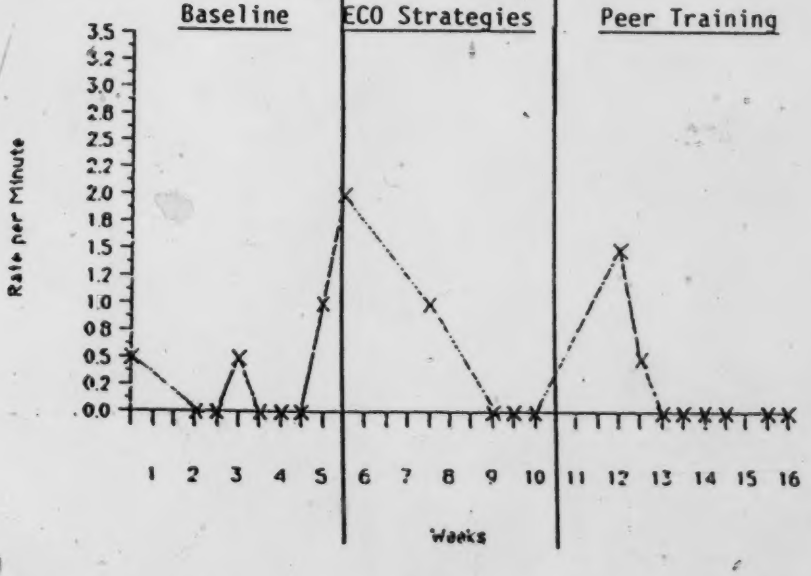
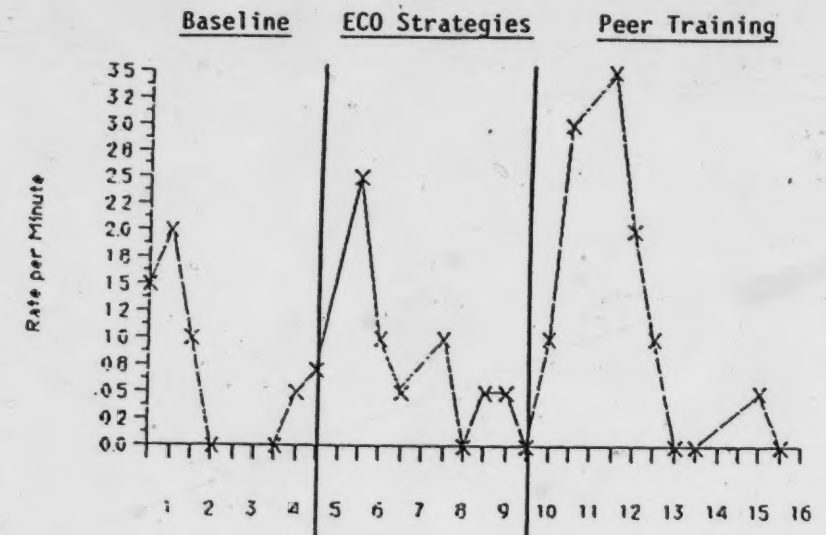


FIGURE 34

Rate of Social Behaviors: Peers to Handicapped Child

03



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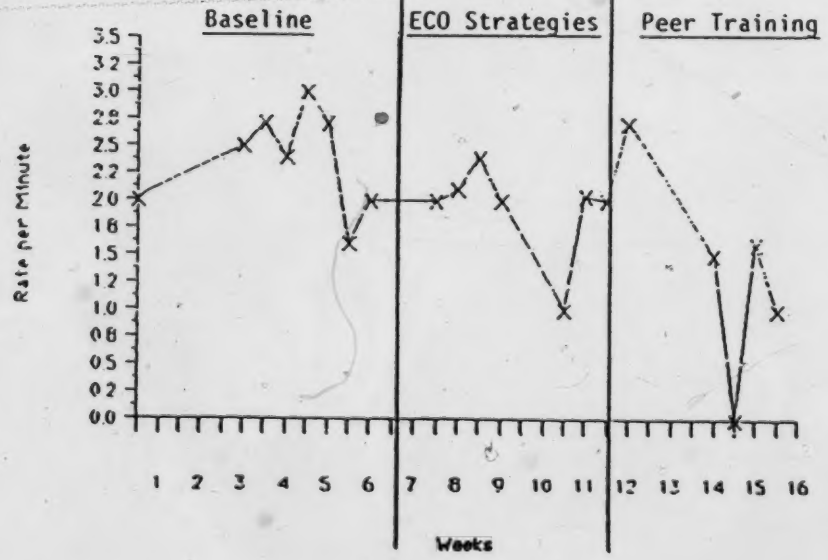
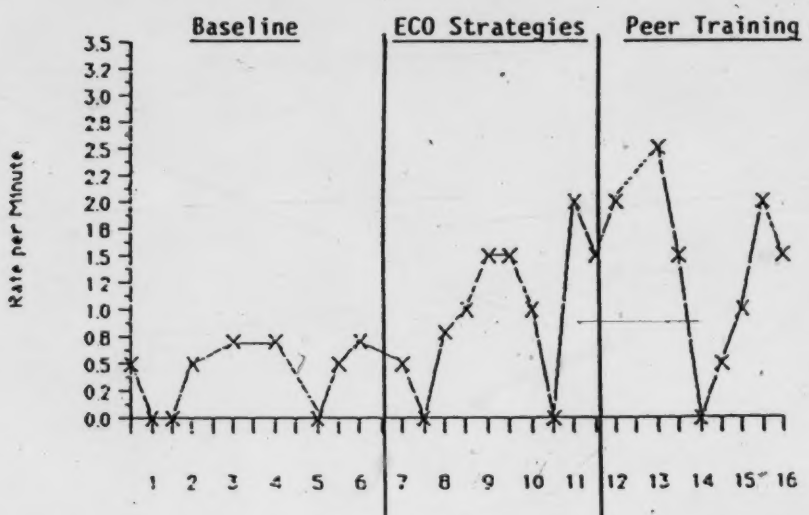


FIGURE 35

Rate of Social Behaviors: Peers to Handicapped Child

09



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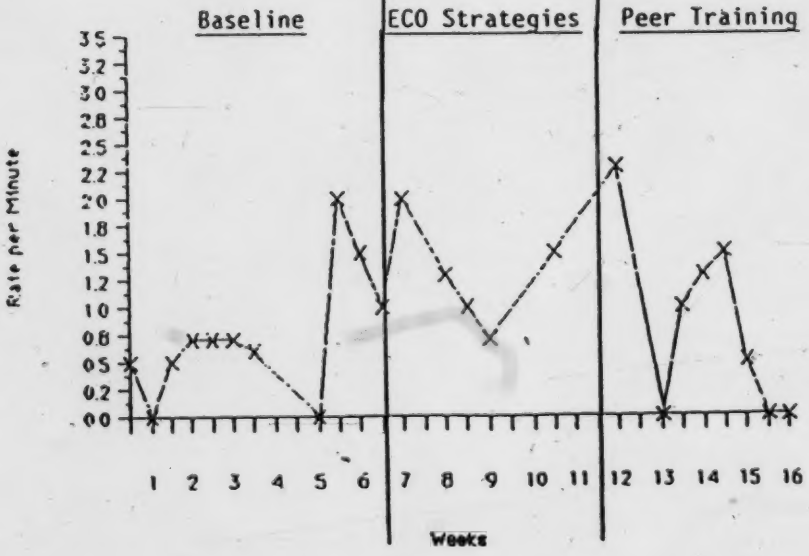


FIGURE 36

Rate of Social Behaviors: Peers to Handicapped Child

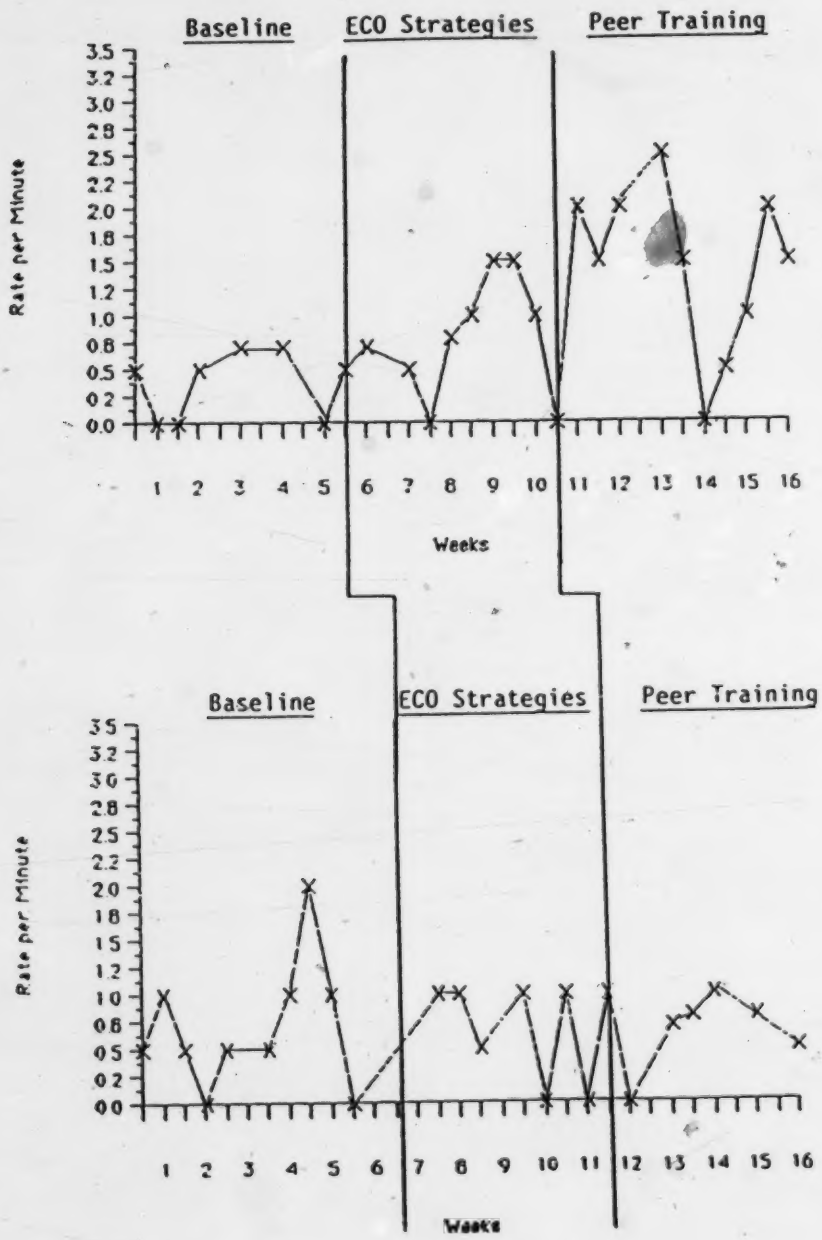
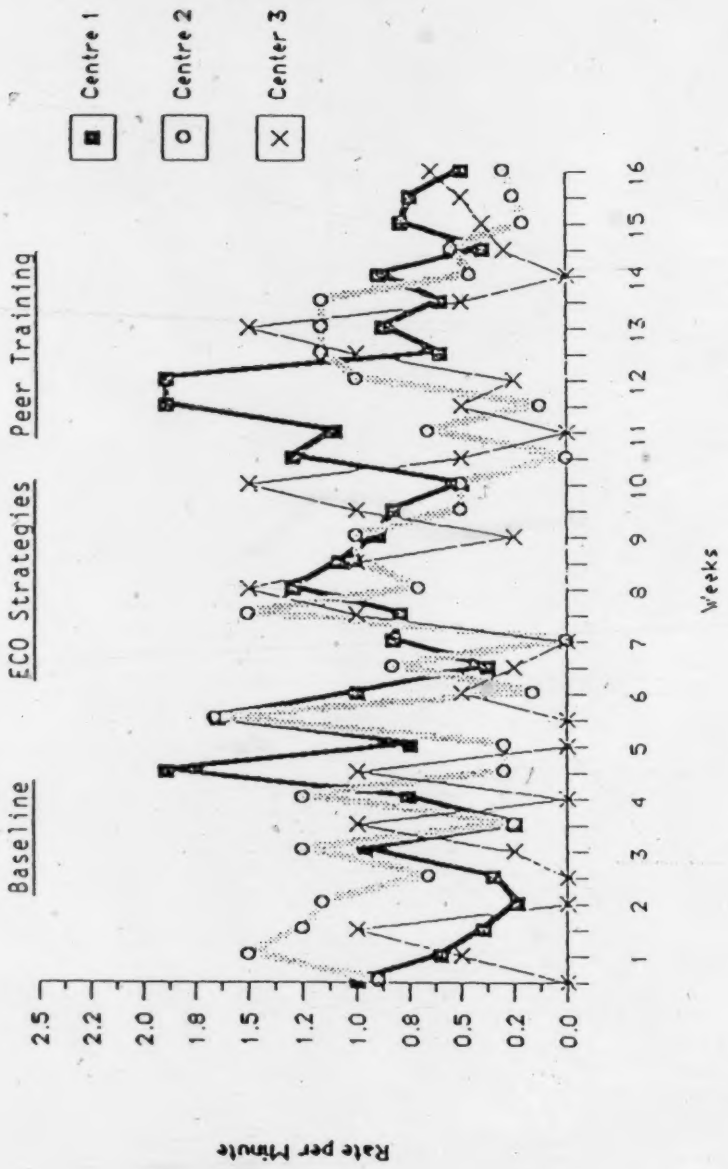


FIGURE 37

Rate of Social Behaviors: Peers to Handicapped Child

Three Programs Compared



Research Question #2

As a result of training, was there a significant increase in the rate of turntaking exchanges between the handicapped child and her/his non-handicapped peers?

A visual analysis of the data presented in Figures 38 through 42 reveals that there is no consistency across subjects in the rate of turntaking exchanges.

It was noted that subjects 3, 4, 7, and 11 were observed to engage in no turntaking exchanges with non-handicapped peers. Minimal changes were observed in all other subjects; the occurrence of turntaking exchanges remained relatively stable across all phases of the study.

FIGURE 38

Rate of Turns: Peers

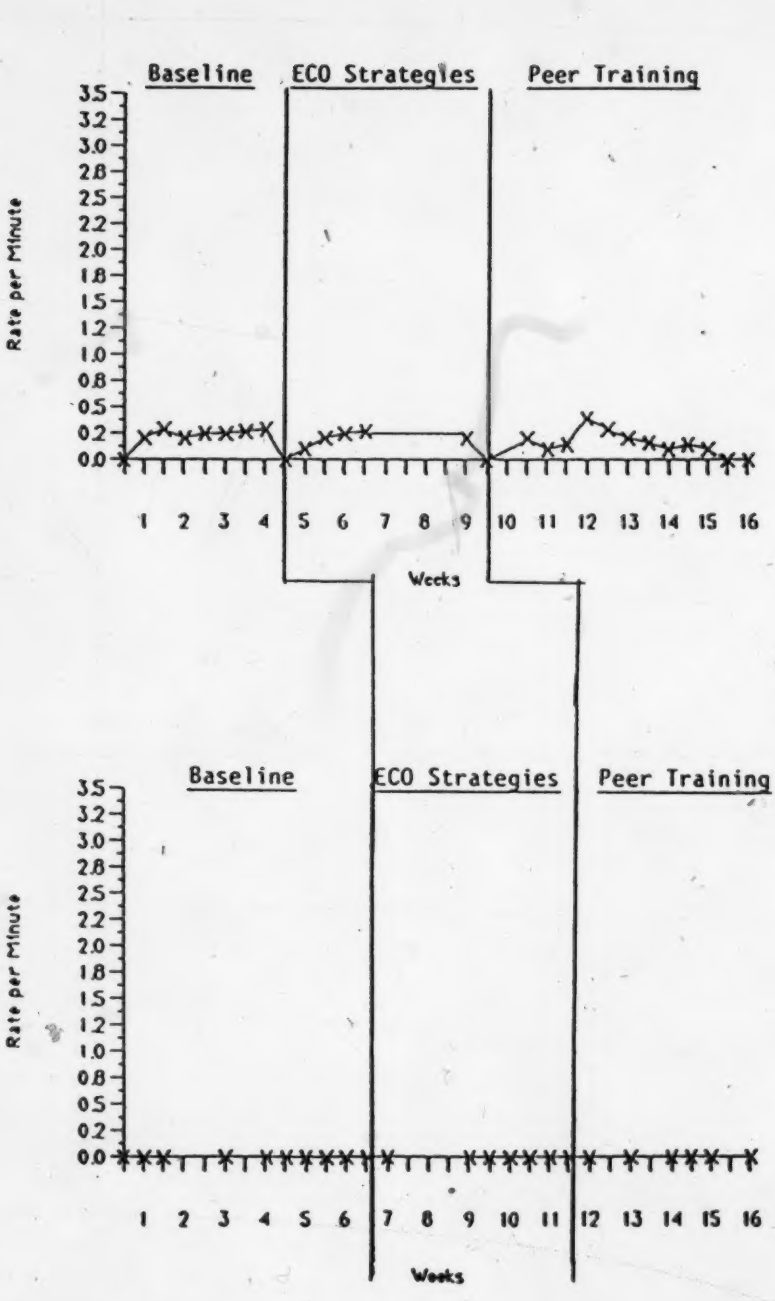
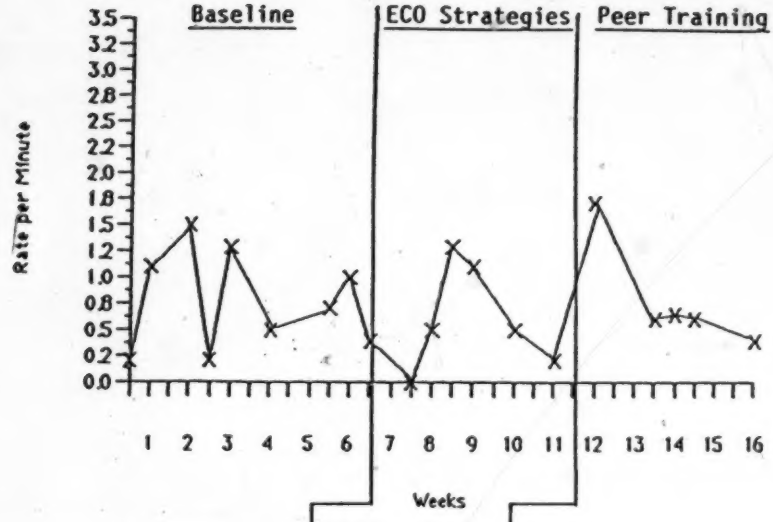


FIGURE 39

Rate of Turns: Peers

05



07

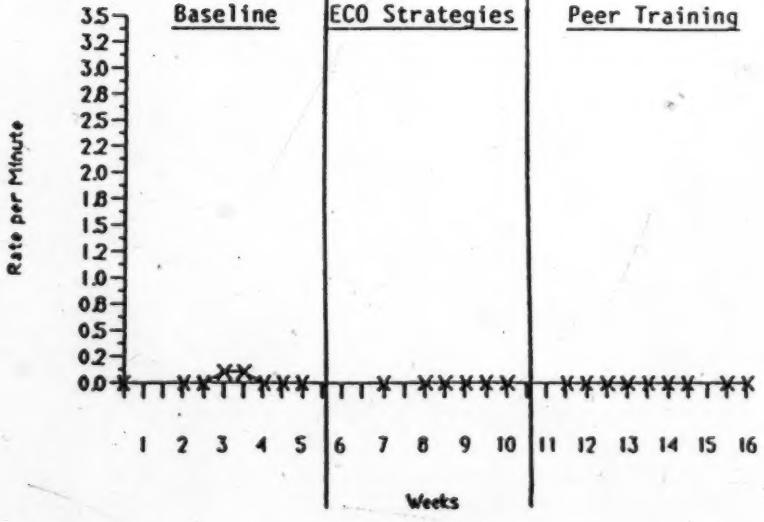


FIGURE 40

Rate of Turns: Peers

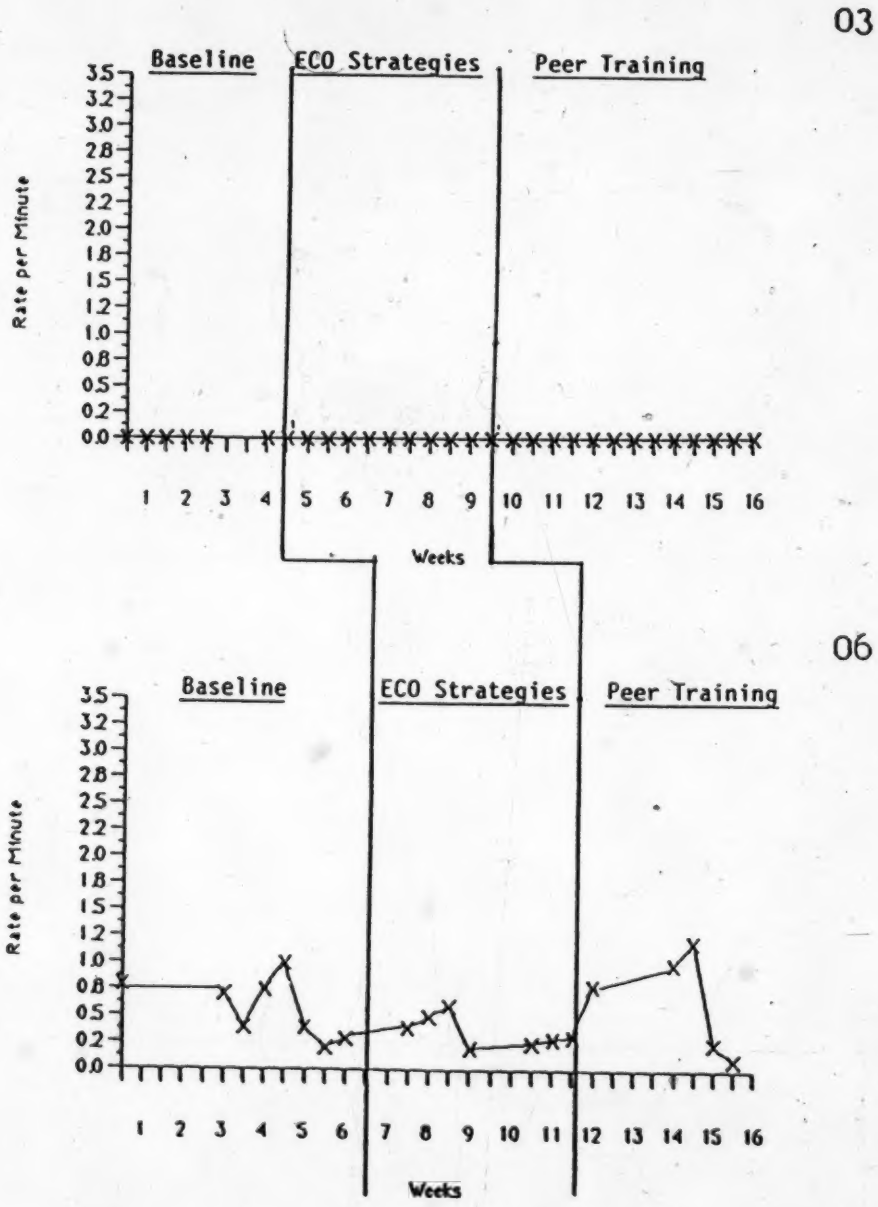
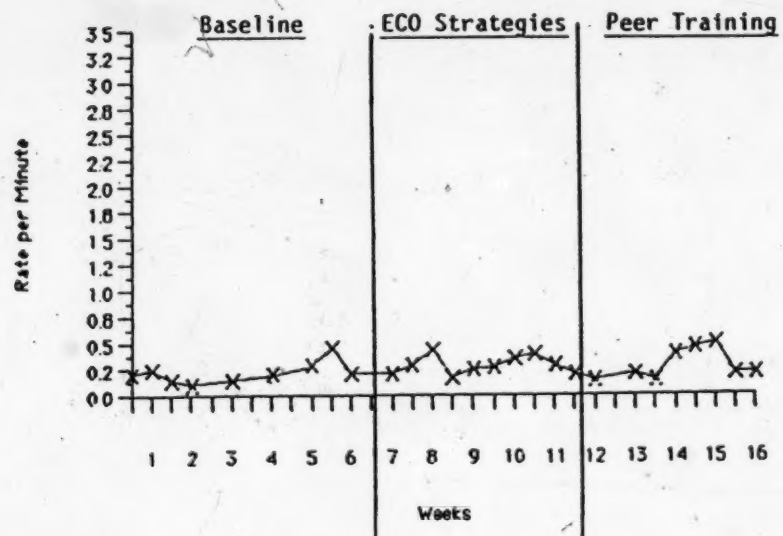


FIGURE 41

Rate of Turns: Peers

09



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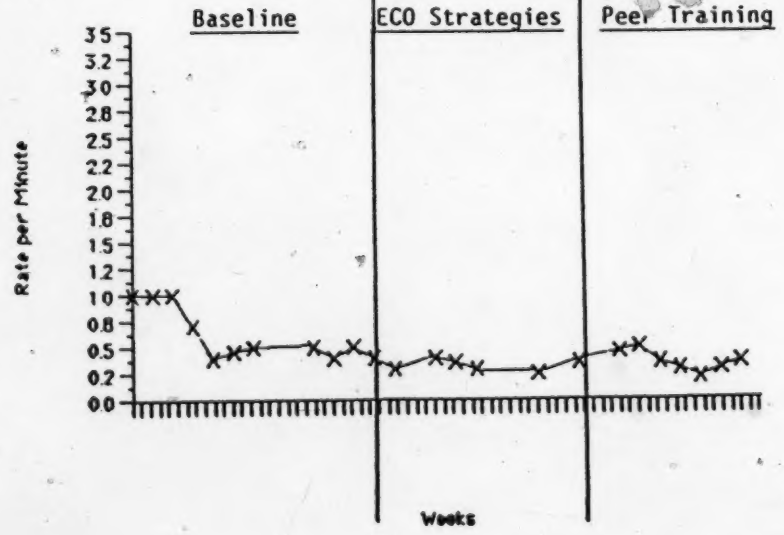
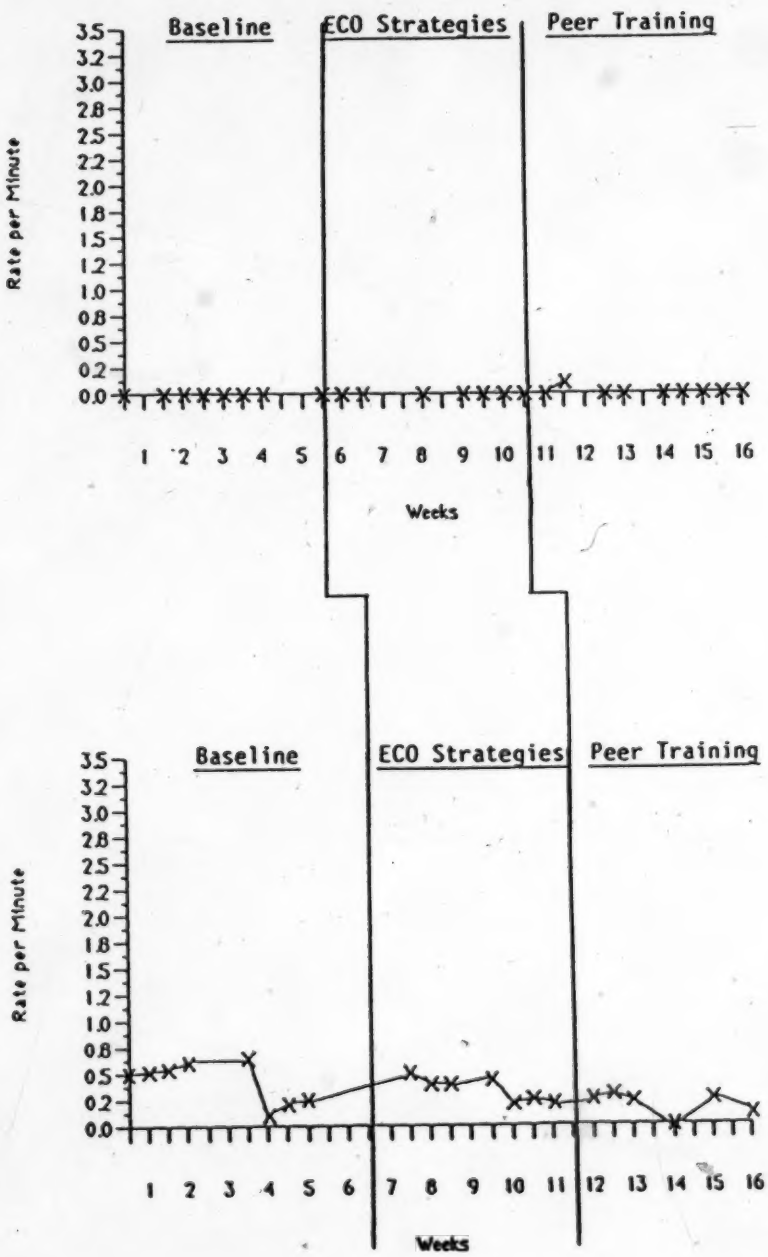


FIGURE 42

Rate of Turns: Peers

11



08

Research Question #3

As a result of training, was there a significant increase in the length of the turntaking exchanges between the non-handicapped peers and the handicapped child?

The data presented in Figures 43 through 48 show that there was no significant increase in the length of turntaking exchanges between handicapped and non-handicapped peers. Again, some handicapped students (nos. 3, 4, 7, and 11) were not observed to engage in any interactive behaviors throughout the study. While other students did interact, there was such a variation in the length of the interactions that it was not possible to show that any increase was due to treatment.

FIGURE 43

Average Length of Turntaking Exchanges: Peer to Handicapped Child

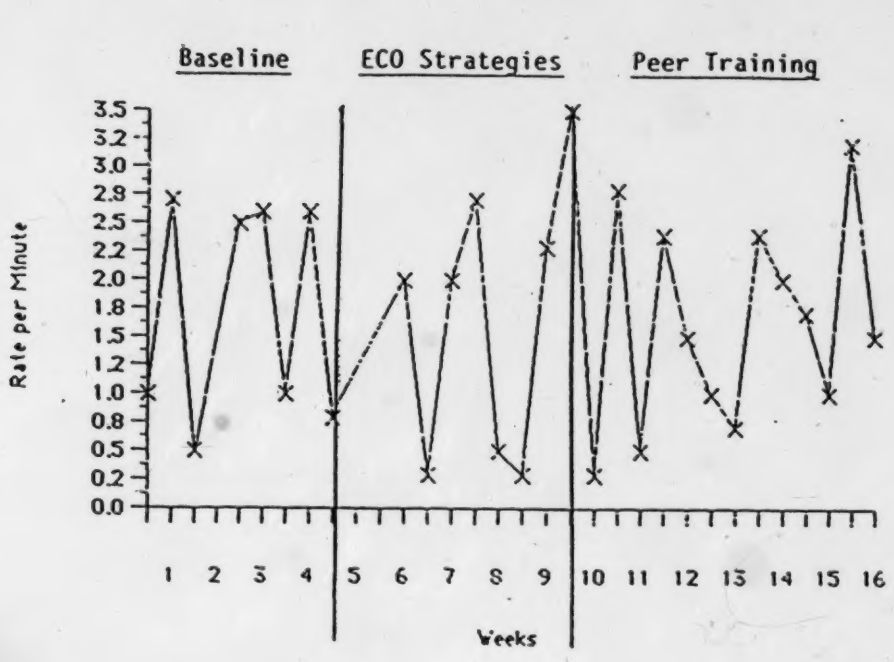


FIGURE 44

Average Length of Turntaking Exchanges: Peer to Handicapped Child

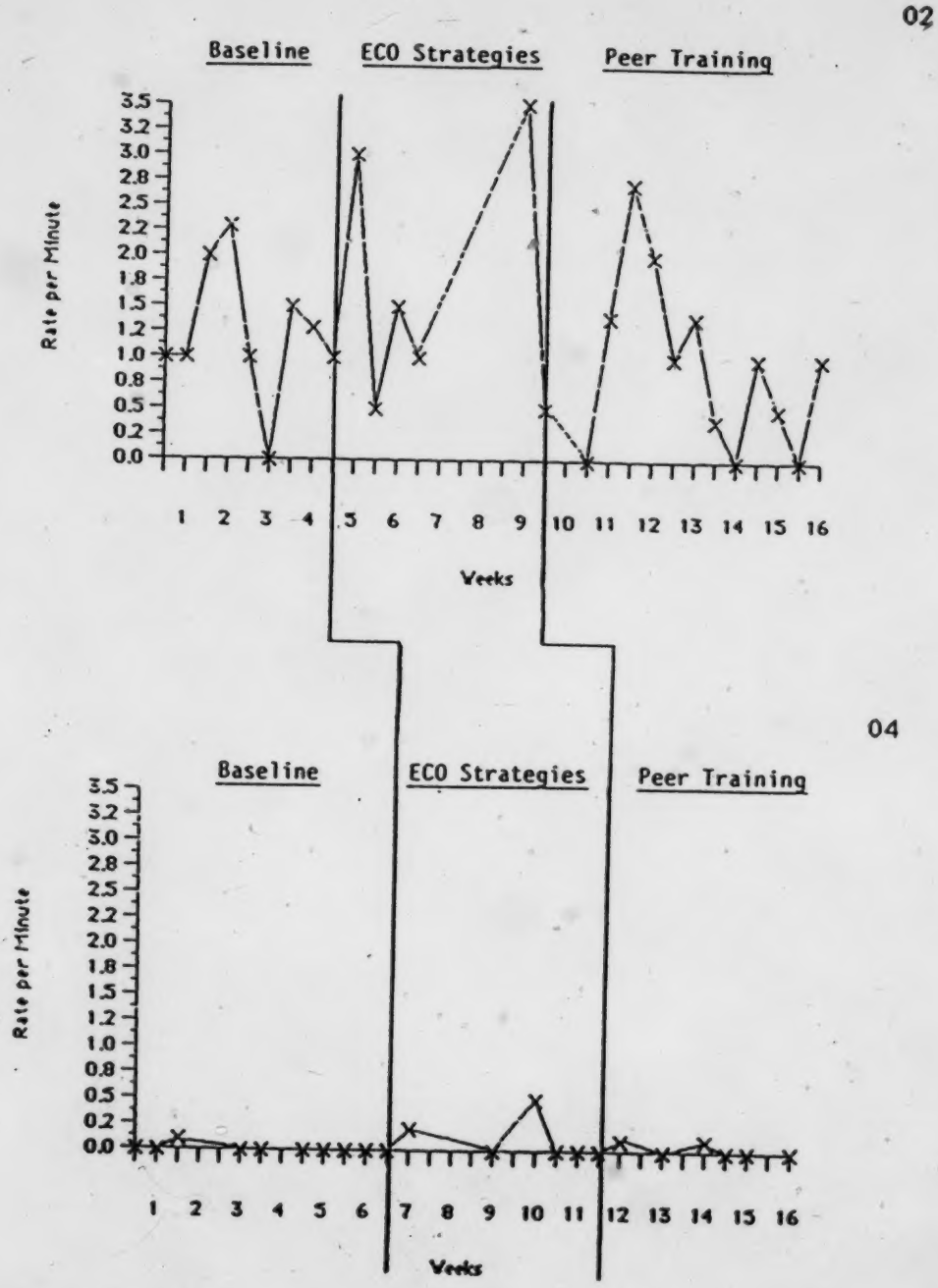


FIGURE 45

Average Length of Turntaking Exchanges: Peer to Handicapped Child

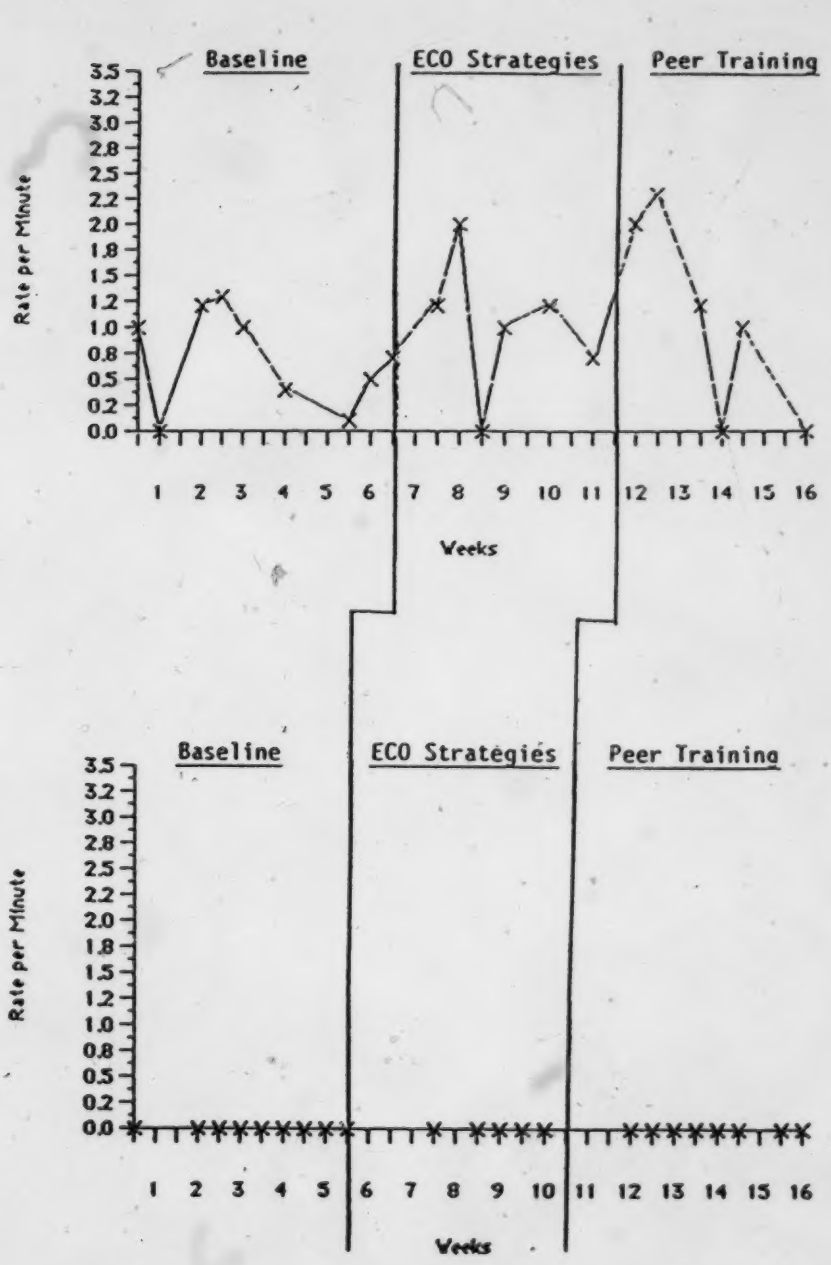


FIGURE 46

Average Length of Turntaking Exchanges: Peer to Handicapped Child

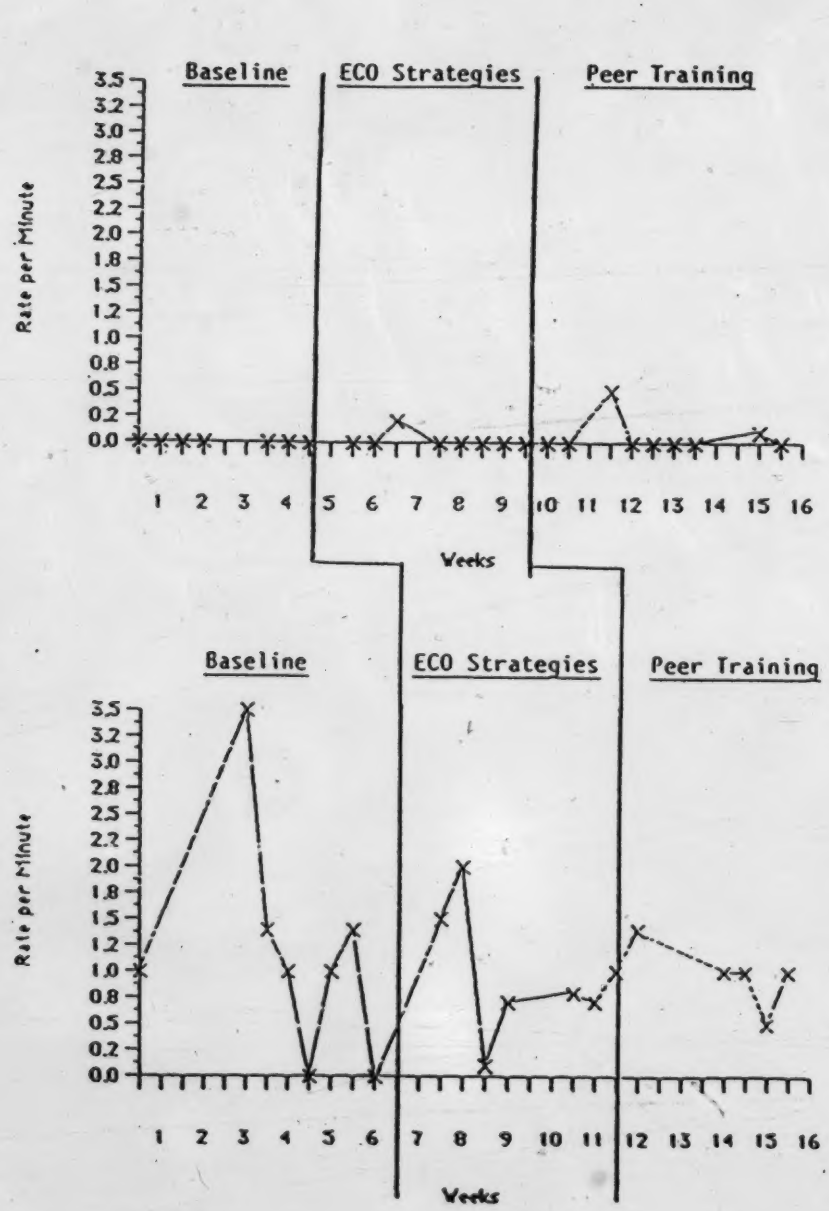
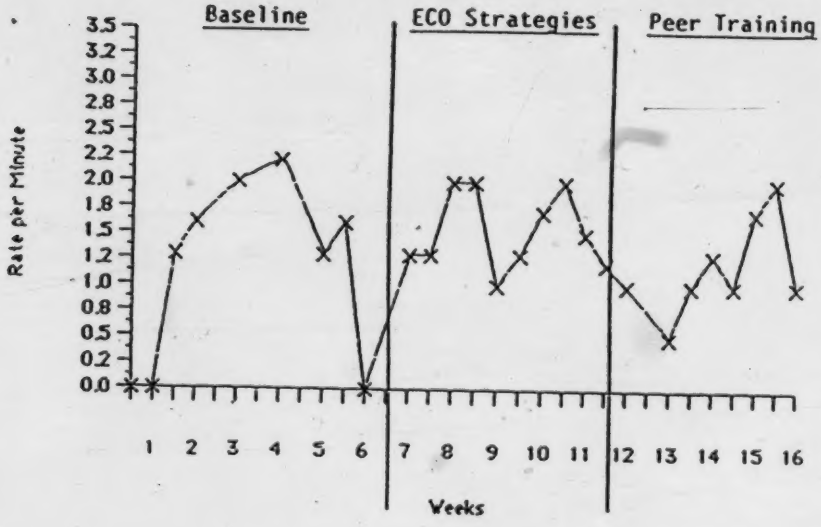


FIGURE 47

Average Length of Turntaking Exchanges: Peer to Handicapped Child

09



10

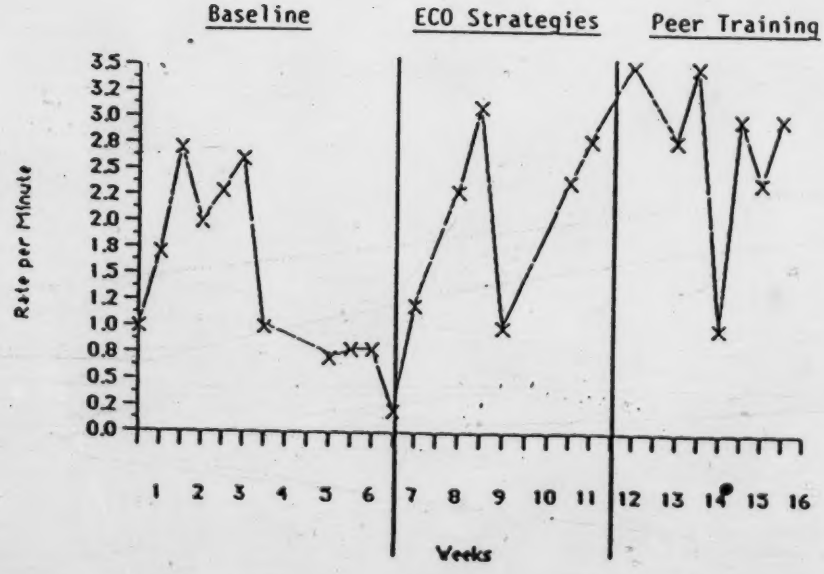
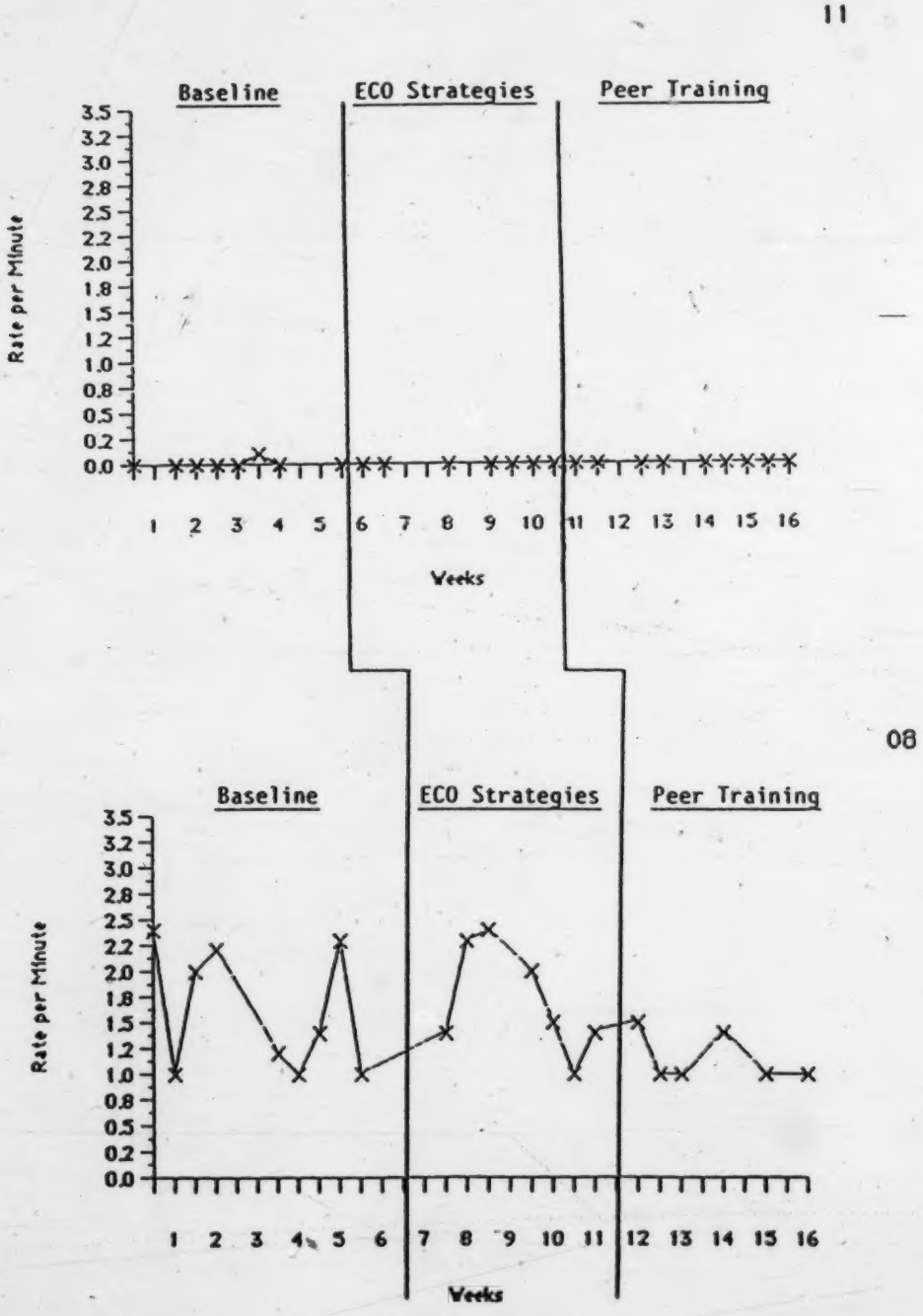


FIGURE 48

Average Length of Turntaking Exchanges: Peer to Handicapped Child



Summary

The observational data collected on the peer mediated treatment indicated inconsistent effects on both the handicapped child and the non-handicapped peers. The variability seen across subjects during this phase of the study generally showed no significant increase in behavior, although there were one or two exceptions. A more detailed discussion of these results is contained in Chapter VI.

CHAPTER VI

DISCUSSION

Instructional staff from three daycare centres integrating handicapped children took part in this investigation into the effectiveness of two inservice training modules. The effectiveness of the training was assessed by means of direct observations of staff and child behaviors within the classroom. The investigation included two distinct phases. The first inservice module consisted of giving the staff specific strategies aimed at enhancing their social interactions with handicapped children. The second module was directed towards giving the staff strategies to encourage the involvement of non-handicapped peers as facilitators of social interactions with the handicapped children.

The following discussion will scrutinize the results of this investigation given in Chapter V, and suggest possible explanations for the effects shown. However, because of the variability across the subjects, the instructional staff and the settings, it is not possible to give definitive statements concerning the results of the observations.

A. Inservice Module #1: Ecological Teaching Strategies

The rate of turntaking exchanges between the staff and the handicapped child showed the most consistent increases following the first treatment. This finding is supported by the staff comments on a informal questionnaire at the completion of the study, a majority of

which rated turntaking as the most useful skill presented to them in the first module. Although increases in the rate of turntaking exchanges between the staff and child were observed in a majority of cases, three children in particular demonstrated minimal or no turntaking exchanges throughout all phases of the investigation. Subjects #3 and #11 were non-verbal children with cerebral palsy and were not ambulatory. Subject #7 was developmentally delayed and exhibited autistic-like behaviors. He did have verbal language abilities, but used them only rarely, and then without apparent communicative intent.

A comparison of the data on the rate of turntaking exchanges (Figures 18 through 24) and the use of ecological teaching strategies (Figures 3 through 8) revealed that the children who demonstrated the lowest rate of turntaking exchanges, were subject to the most frequent use of physical prompt and signalling by the staff. The instructional staff who worked with these children (subjects #3, #7, and #11) consistently did not use Imitation as one of the strategies for attaining interactive behaviors. The absence of use of this particular strategy may account for the report of minimal turntaking exchanges with these children. As MacDonald and Gillette (1984) state, "We utilize imitation as a 'bottom line' strategy; we imitate the child as a way to begin to illustrate turntaking" (MacDonald and Gilette, 1984, p. 177).

The staff comments indicated that Imitation was the most difficult strategy to use. Staff comments include: "it is only

usuable with certain, young children", and "I felt uncomfortable with this (Imitation) and couldn't get into it".

The length of the turntaking exchanges between the instructional staff and the handicapped child showed the least significant change following treatment. In fact, the variability in the data made it impossible to identify any trends. Possible explanations for this include an inconsistent use of the ecological teaching strategies for the purpose of mainstreaming turntaking exchanges and a perception by staff that turntaking exchanges were occurring prior to the training. Comments from staff included, "this (inservice training) helped me to be more consistent with the turntaking that already went on in our program", and, "our children were already using this (turntaking) concept".

Summary

In general, it appears that this inservice module did effectively increase the instructional staff's rate of turntaking behavior with the handicapped child. However, there was an inconsistent use of the ecological teaching strategies which were required to extend the length of the turntaking exchanges. In particular, the Imitation strategy was rarely observed, and this may have contributed to the absence of change in the interactive behaviors.

The fact that the more severely handicapped, non-verbal children showed the least change indicates a need to address the particular need of staff/child dyads, and to train the staff to interpret or treat a wide range of behaviors as communicative.

The perceptions of the staff suggested other factors which may have impacted on the results of this investigation. A majority of the staff believed that they were involved in using the ecological teaching strategies and were proficient in the use of turntaking with handicapped children prior to the training. This perception may have led to a diffuse attitude when they were requested to implement the strategies.

B. Inservice Module #2: Use of Peers to Facilitate Social Interactions

The data collected on the second phase of this study revealed generally inconsistent results on the use of non-handicapped peers as facilitators of social interaction. There was minimal to no increase in the rate of social behaviors of non-handicapped peers as a result of the staff training. This was also true of the observational data on the rate of turntaking exchanges and the length of exchanges between the handicapped child and her/his non-handicapped peer.

An inspection of the data reveals that four of the subjects did not turntake with a non-handicapped peer throughout the duration of the investigation. Two of these children (subjects #3 and #11) had cerebral palsy, and were immobile and non-verbal; the other two were significantly developmentally delayed and had severe language delays.

One of the pertinent factors which affected the results of this study was that of the instructional staff's attitude to this phase of the study. Comments received on a questionnaire given to staff at the completion of the investigation included the following:

* "its (peer training) phoney, in that its 'set up'";

* "makes the peer think he is better than the handicapped child";
* "required too much paperwork";
* "the children are already doing this";
* "did not like the term 'teacher' being used when training peers";
* "the language as designated was too formal and inappropriate".

These perceptions may have existed for a number of reasons. The contention that these strategies were already in use was not borne out by the results of the study. There may have been a marked discrepancy between the language and approach to working with children as proposed in Inservice Module II, and the philosophies and practices of the instructional staff.

Summary

This phase of the investigation was characterized by a lack of consistency in the observed behaviors of the non-handicapped peers. While it is not possible to give definitive reasons for these results, some possible causes have been suggested. These include, the severity of the disability of the handicapped peer, and the attitudes of the daycare staff, which appeared to find this stage of the inservice training either redundant or in contradiction of their child care philosophies.

C. Conclusion

The placement of handicapped children into regular daycare settings has become an increasingly popular child care alternative in the last decade. However, this movement appears to be ahead of any

substantive research evidence concerning its efficacy. What evidence there is suggests that unless there is considerable preparation and planning the handicapped child may be at some risk in an integrated setting. The preparation includes ensuring that the skills and competencies of the teachers are secure, as they are essential pre-requisites to successful integration.

While this is seen as a problem in many situations, since a majority of teachers feel they do not have the necessary skills to meet the needs of the children (Kysela & Barros, 1983), it is doubly so in daycare settings. Many staff do not have any training, and those who do may subscribe to philosophies and approaches which are not congruent with the approaches advocated for handicapped children.

This study has evaluated the effects of two inservice modules which were aimed to offer systematic training in order to facilitate the handicapped child's communication and to encourage the use of peers as facilitators of social interaction.

From the results of this study it is possible to make a number of tentative suggestions concerning the continuation of research in this area which will facilitate the development of training strategies that would have more consistent effects.

These suggestions include the need to assess the probability of affecting change in teachers' skill and competence levels, and in attitudes towards disabled children through inservice training.

It would appear that the design of such training needs to take a number of factors into account if it is to be successful. These include involving staff in the design of the training, knowing the

skill/competency and education level of the participants, and ensuring a period of follow-up during which time participants demonstrate the skills learned.

Grigg (1983) completed a similar study in Early Childhood Service programs, and was able to show more significant change occurring in teacher and child behavior. The difference in results may have been caused by the different levels of education and training already achieved by the teachers, or by the methods used in this training package being more congruent with the approaches used in E.C.S. programs than in daycare centres.

Another area which warrants further attention is that of the infrequent use of imitation as a means to increase social interaction with young handicapped children. This may have resulted from staff failing to understand, or recognize children's behavior as potentially interactive, or it may be that staff did consider that they were already engaged in imitative behavior. Since MacDonald & Gillette (1984) consider this to be such a basic and fundamental skill in social interaction training its absence warrants further study.

Finally, I believe that further study is required in the area of the incongruence of the philosophic approaches which form the base of many daycare centres and the approaches advocated for handicapped children. The fact that few staff in daycare have any pre-service training, and that the philosophic bases are more likely to subscribe to a developmental-interactionist model than to a more structured and directed behaviorist model, may cause considerable misunderstanding by staff. It would appear that there are two major directions for future

study in this area. In the first place can handicapped children develop and integrate within a developmental-interaction model, or is teacher directed instruction in a behaviorist structure more efficacious? Secondly, is it possible within the concept of inservice training to create sufficient change in the attitudes and beliefs of child care workers that they subscribe to and sufficiently understand the structured approaches currently advocated for use with handicapped children? The results of this study would indicate that these particular models met with only modest success, and that considerably more research is required before more definitive answers can be given.

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APPENDIX A

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APPENDIX C

INTEGRATION STUDY

Position: _____ Date: _____

Name and Address of School/Centre: _____

_____

Total Number of Children in Class/Centre: _____

Number of Special Needs Children: _____

Number of Staff: _____

PART I - EDUCATIONAL BACKGROUND:

1. Degrees/Diplomas Obtained:

Institution	Degree/Diploma	Major

2. For each degree/diploma listed above, please indicate specific courses taken which you believe relate to the care or teaching of handicapped children:

Degree/Diploma	Course Name	Full (1 yr.)/Half
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please use reverse side if necessary.

3. Do you feel the training described in questions 1 & 2 is sufficient?

   Yes _____ No _____

   If no, what kind of additional pre-training should be available for staff who will be working in a situation similar to yours?

   _____

   _____

   _____

4. Aside from the inservice training provided during this study, what kind of training have you received which has been provided by your employer, which you feel is related to the care or teaching of the handicapped child?

   _____

   _____

5. Have you received any other training which you feel is related to the care of teaching of handicapped children? (i.e. courses, conferences not offered through the workplace).

   _____

   _____

   _____

PART II - INSERVICE TRAINING

ECOLOGICAL TEACHING STRATEGIES

1. The following ecological teaching strategies were presented to you. Please rate each strategy from 1 (least useful) to 5 (most useful). If possible, comment briefly on their specific relevance to the situations encountered in your classroom.

		COMMENTS
TURNTAKING	1 2 3 4 5	
IMITATION	1 2 3 4 5	
WAIT	1 2 3 4 5	
SIGNAL	1 2 3 4 5	
PHYSICALLY PROMPT	1 2 3 4 5	
MODEL	1 2 3 4 5	
MATCHING MODES	1 2 3 4 5	

Use reverse side of page for comments if necessary.

2. Were the follow-up visits to the classroom/centre helpful to you? Yes _____ No _____. Please comment on the positive/negative aspects of these visits, and how you feel they could be improved:

_____

_____

_____

3. Do you feel, overall, that the training you received had a positive/negative impact on the way in which you interact with the special needs children? Please comment, with particular reference to their usefulness with different students.

_____

_____

_____

4. Additional comments: _____

_____

_____

SOCIAL SKILLS TRAINING:

1. Please rate the following strategies that were presented to you (1 - least useful, 5 - most useful). Comment briefly on their specific relevance to the situations encountered in your class/centre.

		COMMENTS
JOINT TASK ACTIVITIES	1 2 3 4 5	
TRAINING PEERS TO INITIATE	1 2 3 4 5	
SOCIAL PRAISE FOR INTERACTIONS	1 2 3 4 5	

2. Were the follow-up visits to the classroom/centre helpful to you?

   Yes _____ No _____. Please comment on the positive/negative aspects of these visits, and how you feel they can be improved:

   _____

   _____

   _____

3. Do you feel, overall, that these strategies had a positive/negative impact on the patterns of social interaction between the special needs children and their peers? Please comment, with particular reference to their usefulness with different students:

   _____

   _____

   _____

4. Additional comments: _____

   _____

   _____

   _____

Thank you for your assistance.

APPENDIX D

FIGURE 1

DATA SHEET

File: _____

Target Child: John
Observer: Mary
Situation: Free Play Time
Adults Present: 2
Peers Present: 8

School/Centre: 01
Date: 10/03/83
Duration: 10 Minutes

Adult	Target Child	Peer	Adult	Target Child	Peer
(B) R I S G A V W P	B (R) I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B (R) I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	(B) R I S G A V W P	B (R) I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R (I) S G A V W P	B (R) I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B (R) I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P
B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P	B R I S G A V W P

This sheet shows: 1 turn between the focal child and the adult and
2 turns between the focal child and the peer.